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ABSTRACT

A practical guidebook of ideas, lesson materials, and related resources for developing imaginative and productive thinking skills of children is presented to assist teachers and parents. Emphasis is placed on the use of strategies and techniques that enhance originality, mental imagery, reverie, reflection, humor, novel playfulness, and divergent (but productive) thinking. It is suggested that such instruction is important to enable the learner to think through and effectively deal with the complex world. An introduction to creative imagination, the human mind, and developmental stages, and ways to develop imagination through the educational process, are addressed in the first four chapters. Chapter 5 considers various instructional models and programs by which creative imagination can be developed; they involve promoting relaxation and "centering," sharpening and enhancing the image, and symchronized learning. In addition, nine goals useful in teaching creative imagination and problem-solving skills are presented in a developmental hierarchy. In chapter 6, resource materials and strategies that may be implemented in lesson form are described. Chapter 7 presents learning activities that emphasize the importance of using basic sensory processes, such as touching, tasting, and hearing in the development of imagination. Chapters 8 through 12 provide learning activities related to the following: directed fantasy, imaginative situations, creative thinking, linguistic strategies, and developing a sense of humor and divergent thinking. Lastly, chapter 13 discusses creativity in general. A list of approximately 72 references is appended. (SW)

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Strategies for Developing CREATIVE IMAGINATION & THINKING SKILLS

- PREFACE -

This book has been written for those teachers and parents who wish to help children experience the creative joy of using their hearts and minds in learning and thinking. It is a practical guidebook of ideas, lesson materials, and related resources for developing imaginative and productive thinking skills.

The material presented in this book is a rather concise summarization and illustration of current developments in education. Emphasis has been placed on the use of strategies and techniques which enhance originality, mental imagery, reverie, reflection, humor, novel playfulness, and divergent (but productive) thinking.

The author believes that such instruction is essential for helping children to develop into truly educated persons who are capable of "thinking through" and effectively dealing with the complex problems of modern society.

In the first few chapters, the reader is introduced to the importance of creative imagination and how it is developed. Then, some materials and lessons are presented as educational models and resources. The book concludes with a consideration of the importance of humor and the power of the creative spirit.

Teaching strategies are emphasized throughout this book. Each chapter presents practical ideas, illustrations, lesson material, follow-up suggestions and discussion questions for instructional use.

All persons can improve their creative imagination and thinking abilities. But this requires an innovative educational program supported by teachers, parents and others concerned. For example, many school districts are now beginning to provide instruction in thinking and problem-solving skills, imaginative computer education, and in the integrated use of art, music, and drama with academic subjects such as creative writing and mathematics.

Learning disabled and other exceptional persons also profit greatly from training which improves their creative imagination and thinking skills. Such instruction is highly individualized, increases motivation and rewards continual achievement. It also enables the pupil to acquire many new learning strategies which are helpful in improving such basic academic skills as reading and writing.

Winston Churchill once commented that although he always liked to learn he seldom enjoyed being taught. Many other persons have shared his feelings due to a lack of interesting and appropriate instruction. Hopefully, by teaching pupils to develop their creative imaginations and thinking skills, we can also increase their intrinsic joy of learning --- and that is what true education is all about.

Robert E. Valett

This book is dedicated to the creative spirit and thought of Mark Twain - and to the child in each of us.

- ACKNOWLEDGMENTS -

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Strategies for developing
CREATIVE IMAGINATION & THINKING SKILLS

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-CONTENTS-

Chapter 1. Creative Imagination page 1
2. The Human Mind 9
3. Ages and Stages 18
4. The Educational Process 27
5. Instructional Models 37
6. Resource Materials and Strategies 54
7. Sensory Images 64
8. Directed Fantasy 80
9. Imaginative Situations 95
10. Creative Thinking 110
11. Linguistic Strategies 124
12. Developing the Sense of Humor and Divergent Thinking 143
13. The Creative Spirit 156
References 166

DEVELOPING CREATIVE IMAGINATION

> "Imagination is more important
> than knowledge"
> - Albert Einstein

Chapter I. CREATIVE IMAGINATION

Recently, the science fantasy film "E.T." has evoked wonder and joy in the hearts and minds of people everywhere. In this story a young boy discovers a stranded extra-terrestrial being, becomes his protector, and develops a strong emotional bond with this uniquely intelligent creature. With the boy's help, "E.T." is eventually able to return to his home planet. This fascinating production is the result of Steven Spielberg's creative imagination - which has also given us other awe-inspiring movies and stories to ponder upon.

Some years ago the writer Robert Louis Stevenson also captivated the public with his amazing stories and poems. His books KIDNAPPED and TREASURE ISLAND have stimulated the minds of generations of young people throughout the world. Stevenson's strange visions and daydreams also eventuated in a symbolic tale about a good doctor whose personality changed to evil as a result of using experimental drugs. The book, published as THE STRANGE CASE OF DR. JEKYLL AND MR. HYDE, has also become a classic film. These products of Stevenson's creative imagination continue to provoke speculation about escape and personal transformation.

It seems readily apparent that novelists, poets, artists, film makers, and actors are among those whose products are dependent upon good creative imaginations. However it is not widely recognized that scientists, inventors, and even mathematicians espouse the value and importance of human imagination.

For example, Albert Einstein relied primarily on the initial development of visual images and imaginative ideas before he began the rational analysis of available data; he also believed that schools should give priority to teaching independent thinking and judgment rather than the acquisition of special knowledge. In the history of science, Einstein was not alone.

Samuel Howe invented the sewing machine as a result of dream-like images. The chemist Friedrich Kekule saw the molecular structure of benzene in a dream. The physiologist Otto Loewi conceived of the chemical transmission of nervous impulses in a dream state. Thomas Edison played with imaginative ideas until they evolved into an experimental design. The archeologist Loren Eisley has aptly described man as a "symbol shifting magician" who is a constantly changing "cosmic orphan" fascinated with novel ideas and images. Other scientists, such as the philosopher-mathematician Arthur Koestler, have pointed out that when the scientist sees an analogy where nobody saw one before, and the poet discovers an original metaphor or simile - both are relying on the mediation of unconscious processes and imagination.

However, it is through the poetic and vivid pictorial forms that the power of creative imagination is most widely experienced. The compeling visual images are clear for all to see in the creations of artists such as William Blake, Salvadore Dali, and others. Likewise, the dreams of great architects appear in their designs and continuously changing buildings and monuments. The daydreams and images of poets such as Samuel Coleridge's "Kubla Khan" and the similar works of William Wordsworth seem to have a magical transforming influence on those who encounter them. The best music of great composers, such as Giuseppe Tartini's sonatas, have frequently stemmed from unconscious images and states of awareness.

The astronomer Carl Sagan has speculated on the evolution of human intelligence and has concluded that scientific insights are characteristically intuitive. However, they are described later and verified by linear analytical argument. Whereas the creative act has major right-hemisphere brain components the actual validation of imaginative products is largely dependent upon left-hemispheric functions. Sagan feels that the most significant creative activities of our culture - legal and ethical systems, art, music, science, and technology - have only been made possible through the collaborative work of the left and right hemisphere.

Purpose.

The purpose of creative imagination is to transform persons and the world in which they live. The distinguishing attribute of the human animal is its unique ability to imagine and manipulate symbolic thoughts and ideas. Mankind continuously modifies itself, its culture, and its physical environment through the never ending interplay of novel thoughts and symbolic images. All civilizations and their artifacts are products of creative imagination at a certain point in evolutionary time and space.

The individual person has vast creative potentialities. All persons possess creative imagination, intuition, and transformational powers although they may be relatively undeveloped, neglected, or actually suppressed by authoritarian forces and pressures. But every man and woman strives to rise above the mundane elements of his or her existence through play and fantasy. Millions throng to Disneyland parks to engage in the excitement of fanciful play and novel experience. Every person daydreams of becoming a superman or superwoman - if even for a moment! And we are all thrilled by the mysteries and illusions of the great magicians, the stories of mythical heroes, and our own personal dreams of adventure and escape to new and better worlds.

"Creative Art (whether the instrument
of words she use, or pencil pregnant
with ethereal hues,) demands the service
of a mind and heart "

- William Wordsworth

Although we are surrounded by the products of creative imagination, many persons are unaware or unaccepting of their own creative energies and potentialities. Most children are not taught that they harbor such wondrous powers within themselves. And few schools have recognized the importance of developing the creative imaginations of the pupils they have been designed to serve.

The great cellist Pablo Casals proposed that we teach children that they are unique marvels who have evolved over millions of years with no identical counterparts. The philosopher Henri Bergson also advocated that humans be more fully educated regarding their place in the perpetual evolutionary creation of novelty and possibility - and that the vital life force within us can be used and channeled. These views have also been supported by psychologists such as Carl Jung and Abraham Maslow, among others. Jung feels that since all the works of man have their origin in the inherited powers of creative imagination, we must be very careful not to discourage fantasy in children. And Maslow has written that education should promote development of the spontaneous, unpremeditated creative expression of the self wherein esthetic perceiving and peak-experiencing are seen as central aspects of human life and education rather than as peripheral ones. There does seem to be some growing awareness by teachers, parents, and concerned adults that it is essential that educational systems and programs be developed to enhance the creative imaginations of all pupils, if humankind is to continue to survive and evolve.

Learning to Live.

Psychologically, most men are islands forever struggling to live with themselves and others. Much of our life and energy is actually spent talking to ourselves and entertaining our own dreams, images, and aspirations. Our self image, our social image, and the ev changing pictures in our minds of the world about us actually determine how functional we are in daily affairs. These self-actualizing, creative images spring from the personality and show themselves in the ordinary affairs of life such as in work attitudes, humor, our open perceptiveness of the natural world, academic learning, physical health, and well being.

In fact, great and startling feats have been accomplished by ordinary persons who purposely formulate strong mental images. Numerous athletes are guided by the dynamic images of what they want themselves to be. For example, the famous miler, Glenn Cunningham, "became that way" by consciously willing and imagining his step by step recovery from serious burns. Today, normal healthy athletes of all kinds strive to improve their performance through creatively imagining the desired golf stroke, basketball maneuver, or other body movements. And millions of persons have been caught up in wholistic health movements which include the use of "how to do it" books, exercise records, relaxation tapes, positive assertion films and other means of practical self-improvement involving creative body imagery.

Perhaps the most dramatic illustration of the power of learning to use creative imagination is in the recovery from terminal illness. For example, the renowned editor and writer, Norman Cousins, has documented in some detail how he learned to cope with the degenerating disease of ankylosing spondylitis where the normal recovery rate was one in five hundred. Cousins literally willed himself to live through a series of exercises combining laughter (mainly from joke books and watching Laurel and Hardy films) with positive visualizations of body regeneration; his experience taught him to never underestimate the capacity of the human mind and body to renew itself under the most wretched of conditions. Similar techniques have been used with both children and adults suffering from cancerous diseases. Dr. Albert Schweitzer used a combination of music (mostly Bach), laughter, purposeful imagery, and medicine to recover from his own illness. Dr. Carl Simonton has successfully helped cancer patients develop positive mental images of their white corpuscles and body processes to combat the disease.

In this book however, the emphasis is on using creative imagination to improve the learning process itself. Although everyone can use these methods and techniques to improve themselves and to become more productive persons, they are especially valuable for individuals with special learning problems. Memory, awareness, comprehension, attention, originality, and productive achievement can all be enhanced through the use of creative mental imagery. Learning to cope and to function more effectively in school, at work or play is the major goal pursued in this book.

Ch. 1 DISCUSSION QUESTIONS & ACTIVITIES

1. Discuss one of your favorite novels or short stories and explain its attraction.
2. Share an artistic production such as a painting or poem that you think would be highly stimulating to a child's imagination.
3. What are some of the ways that you have expressed your own creative potentialities?
4. Select a newspaper or magazine report about some unusual new product or creative experience.
5. What makes you laugh? How might laughter be used for personal renewal?

"One's-self I sing -
a simple, separate Person;
Of Life immense -
in passion, pulse, and power."
- Walt Whitman

Chapter 2. THE HUMAN MIND

The human mind remains a mystery of varied pulsations, passions, and unique powers. But it is gradually being explored and understood. And we now know that both the sources and forces of nature are present in the human mind and body. Scientists have reminded us that we are in the most profound sense children of the universe since we are the products of fifteen billion years of cosmic evolution. But we have also realized that there is much more to the world than our mind can see, feel, or comprehend.

In fact, the human mind can only perceive a small part of the electromagnetic spectrum while bumblebees see high frequency ultraviolet, rattlesnakes see infrared, dogs hear high frequency sound waves, pigeons "home", etc. But mankind does introject and respond to cosmic forces unconsciously as well as consciously. And although many of those forces cannot be perceived directly through our limited senses, we have been able to conceive of them through our creative imagination and intelligence.

Mental Functions.

The mind itself is an abstraction of the human imagination. And its functions can be described in many different ways. However, the human mind does exist and can be characterized as the total conscious and unconscious field of human perceptions, feelings, thoughts, and intuitions. The major functions include-

- Sensory perception and processing: the focusing, acquisition, channeling, integration, and organization of sensory data and information. Artists have highly developed sensory functions.

- Emotional feelings and interrelatedness: the affective involvement with persons, nature, and things including such complex relationships as love, empathy, interest, motivation, values, and self-esteem. The success of family life and social organization is dependent on this function.

- Thoughtful problem solving: the conscious analysis, calculation, comprehension, and evaluation of knowledge and information. Scientific advancement depends on the development of critical thinking skills.

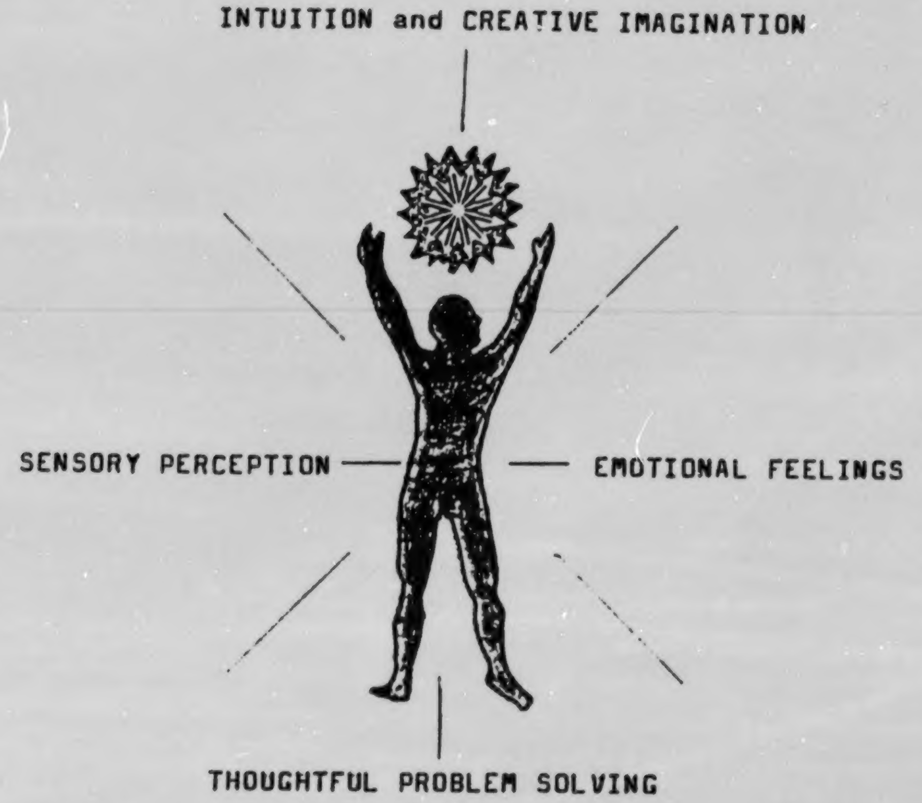
- Intuition and creative imagination: the largely unconscious insights, symbolic visions, and transformational experiences of the human psyche. Poets and novelists rely heavily on this function.

The human mind can be represented pictorially as an iceberg slowly moving in a huge ocean current. The tip of the iceberg is but a small part of its totality and represents human consciousness which largely consists of thoughtful behavior. The submerged part of the iceberg represents the greater mass of unconscious sensations, feelings, and intuitions which constitute the human mind. The mind itself, like the iceberg, is forever moving and changing according to its place in time and space.

The iceberg also has its own unique molecular structure and internal forces which are unevenly distributed. In a similar fashion the human mind is formed and structured through the evolving brain and its varied impulses and functions. For example, a thought is made of hundreds of electrochemical impulses with something like a hundred trillion neuron connections in the human cortex. Not only thoughts, but our feelings, intuitions, and sensations also have a physical reality. Neurophysiologists have demonstrated that conscious volition, by affecting a single neuron, will trigger off changes in activity in large parts of the cortical network. So human biology and psychology are clearly interdependent.

Right Brain, Left Brain, and Inbetween.

An examination of the human brain will disclose several major parts - each with its own functions. The left hemisphere of the brain is largely concerned with the analytical,

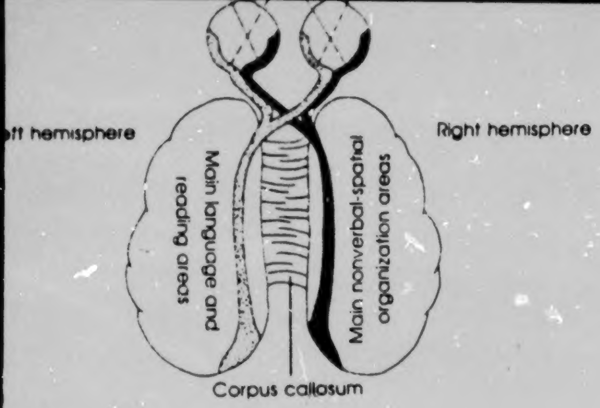

INTUITION and CREATIVE IMAGINATION
SENSORY PERCEPTION
EMOTIONAL FEELINGS
THOUGHTFUL PROBLEM SOLVING

— Mental functions —

propositional, and logical thought processes such as language and mathematics. The right hemisphere is given to appositional, imaginative, visual-spatial-perceptual processes such as those required in designing, map reading, and artistic production. Between the two hemispheres is the corpus collosum which serves as a neural switchboard with synthesizing and integrating functions for the two hemispheres. The midbrain organs and activating systems serve as mediators of our emotional feelings and biological predispositions. There are also some rather specific localized abilities in certain areas of the brain.

Sensory areas for instance, are discrete but clearly interdependent. For example, several years ago the neurosurgeon Wilder Penfield described operations on patients in whom electrical stimulation of the left temporal lobe seemed to tap specific long term memories; one patient named "Maria" reported hearing the composition "The War March of the Priests" when this part of her brain was stimulated - and then recalled the visual image of the record album on which it was recorded. Other researchers have discovered that special training, such as focused attention or meditation, activates synchronous brain functioning between both hemispheres which improves perceptual discrimination, memory, and grade point averages of students.

Imaginative creative thinking demands the development and integration of psychological functions and all parts of the brain. Long term memory is one mental operation which is basic to functional problem solving as well as creative imagination. The memory process involves the synchronization of many parts of the brain. For instance, memorization begins with the imprinting of sensory cues such as the phonetic features


ft hemisphere
Right hemisphere
Main language and reading areas
Main nonverbal-spatial organization areas
Corpus callosum

THE NEUROPSYCHOLOGY OF MENTAL ABILITIES

Brain Units	Major Functions	Abilities (and Disabilities)	Activators
1. Conscious Programming: • Frontal lobes • Prefrontal Cortical Areas	**Thinking:** • Planning • Decision Making • Verification • Correction • Actualization	• Sociability (asocial/anti-social) • Conscientiousness (amoral/immoral) • Imagination (constricted) • Reasonableness (delusional) • Foresightedness (shortsightedness)	• Self-reinforcement • Inner speech
2. Information Processing: • Cortical Association Areas: —sensory (parietal) —auditory (temporal) —visual (occipital)	**Sensation:** • Recording • Association • Integration • Coding • Retention	**Left Hemisphere** • Convergent thinking (dissociation) • Writing (dysgraphia) • Spelling (disphonemia) • Reading (alexia/dyslexia) • Computation (dyscalculia) • Articulation (dysarthria) • Speaking (asphasia/dysphasia) • Memorizing (anomia/forgetfulness) • Right-side movements (paralysis) **Right Hemisphere** • Divergent thinking (suppression) • Sports and games (disorientation) • Drawing and painting (distortion/reversals) • Singing (amusia/tune deafness) • Map reading and designing (directional confusion) • Time orientation (lateness) • Geometry (spatial disorganization) • Industrial arts and building (disproportionality) • Left-side movements (paralysis)	• Practice • Feedback • Exercise • Sensory stimulation • Biochemical neurotransmission
3. Physical Regulation: • Reticular Activating System • Vestibular/Proprioceptor System • Cerebellum	**Adaptation:** • Arousal • Feeling • Attention • Responding • Inhibition	• Self-control (impulsive) • Balance and coordination (apraxic/awkward) • Concentration (distractable) • Flexibility (tense/perseverative) • Strength and endurance (weak)	• Nutrition • Genetics

of a word just heard. Then sensory sound impressions are transferred to image memory which are primarily visual forms or pictures. The last stage in memorization is the coding of these sensory traces into some system of categories or rules, which is a higher order rational function. Finally, recall of memorized material is an active process involving other brain centers concerned with motivation, enactment, and systems of active search. Learning to spell a new list of scientific words clearly illustrates all of these processes in action.

Let us consider a "good" spelling program in more detail. The word "molecule" may first be presented in visual form on some list (right hemisphere stimulation). The word is then presented through spoken language in an auditory-phonetic sequence (left hemisphere stimulation). Music might also be used to synchronize the auditory-visual processes (across the corpus callosum) and to enable the learner to develop some visual picture of the word (perhaps a particular molecule dancing in space). Then the word is integrated into a category (such as "organic" molecules) which help to associate and activate the impression.

The physician-biologist Lewis Thomas has creatively described thought itself as consisting of molecules called "notions". When the mind is heated up a little with interest and excitement, molecular movement increases and notions encounter one another. Then when certain notions attract each other an idea is born. Harmonious notions and ideas become streams-of-thoughts which move through the mind like music changing the moods of those encountering it.

Mental Impressions.

Creative thought, then, consists of notions of molecular energy which can be perceived as mental images originating in particular sensory impressions. The initial sensory stimulation may determine the impression made on the nervous system and its significance for later recall and application. The psychologist William James aptly described how sensations, once experienced, modify the nervous system of the organism so that imaginative copies of them arise again in the mind after the original outward stimulus is gone. James also described several major types of imagination inherent in all persons:

. Visual Images	(close your eyes and imagine what was on your breakfast table this morning).
. Auditory Images	(try to recall and "hear" a fovorite tune or song).
. Motor Kinetic Images	(imaginatively enact driving a manual shift sports car).
. Touch/haptic Images	(imagine stroking your dog or cat).

Sensory impressions vary according to type (visual, auditory, kinetic, haptic, etc.), novelty, exaggeration, time, and duration. For example, a novel and exaggerated sensory impression is most often a lasting one. That is why most effective learning takes place in stimulating situations involving some form of kinetic or dramatic involvement and fantasy. Ghost stories, science fiction films, and adventure novels are usually exaggerations of reality and therefore carry more lasting impressions. Once seen, who can forget Snow White or "E.T."? So, too, we find the catchy tune, an unusual vacation, or a strange and erie experience easy to recall.

For educational purposes it is most effective for the teacher to present the stimulus material to be learned in somewhat exaggerated form. That is why good teachers tend to be "ham actors" who present the unusual, excite the imagination, and exaggerate the visual, auditory, or other image just enough to "register" in the human mind. Such vivid sensory impressions or images may arise from either internal or external sources. Most formal education programs consist of a series of externally imposed auditory, visual, and kinetic stimuli (which is seldom synchronized, integrated, novel, exaggerated, or exciting) to the student to learn.

Conversely, those mental images that stem from within the person are usually the most powerful educationally. The unique predispositions, talents, fantasies, dreams, and aspirations of the individual person are driving forces. On a more unconscious level, the primordial images of mythic heroes are also present in every individual as part of the inherited powers of human imagination and these exaggerated impressions continue to make lasting impressions.

Creative imagination is a natural psychological function of the human mind and brain. It consists of integrated sensory impressions acquired by time, experience, and education. Images, mental pictures, and novel ideas are dynamic entities within the mind. When activated through personal receptiveness, volition, and action these forces can produce both material and psychological changes in individuals and the culture in which they live.

Ch.2 DISCUSSION QUESTIONS & ACTIVITIES

1. What is your strongest or "best" human function? How do you know?
2. Are you primarily a "left brained" or a "right brained" person? Why do you believe so?
3. Discuss the importance of inner speech as an activator of the human thinking function.
4. What are the most impressive "notions" that have occured to you? How and when did this happen?
5. Experience one of the visual, auditory, motor, or touch/haptic images suggested in this chapter. Attempt to exaggerate the image and share your impressions.

Imagination is the celestial
star in humankind
- Carl Jung

Chapter 3. AGES AND STAGES

Creative imagination is a natural human ability which developes with time and experience. It requires an open receptiveness to sensory impressionism and paralogical thought processes and springs from creative human inclinations, propensities, tendencies, and potentialities that are shaped by life and education.

Creative imagination also requires spontaneity, integration, self-acceptance, and personal courage to engage in the following mental operations:

- Fantasy: Ability to create wishful, ingenious, visionary, exaggerated thoughts and images.
- Originality: Ability to think in novel, independent, divergent, and flexible ways.
- Reverie: Ability to enter a state of dreamy, intuitive, inspirational reflection or meditation.
- Playfulness: Ability to move and act in an open, frolicking, delightful, or humorous way.
- Creative Language: Ability to use language forms to express associative, symbolic, or allegorical-metaphorical ideas and relationships.
- Transcendence: Ability to explore, to inquire, to wonder, and the will to transform knowledge and experience.

It can be readily seen that these kinds of mental abilities are ones that are generally found in young children before they are unduly conditioned by their culture. With formal schooling, thought control and shaping begin and the person may actually be punished as he or she grows older and fails to conform to the prevailing conventional ways of feeling, thinking, and acting. In this way, our natural creative instincts and intuitions are frequently inhibited and thwarted - if not actually destroyed.

As a result, many children with creative potentialities actually suffer through their school years but are still able to make major contributions to self and society. Thomas Edison finally dropped out of school when it interfered with his imaginative explorations. Winston Churchill endured a conventionally restrictive education and later stated that although he hated being taught, he loved to learn. The writer, William Saroyan, left elementary school and never returned so he could spend time in the public library reading and writing creative works. Many other individuals have rejected formal education programs and left high school early to establish new electronic firms, other businesses, or to engage in compelling exploratory and creative experiences.

Accordingly, educators have become increasingly concerned about the actual regressive and destructive nature of the curriculum which is limited to conventional left-brain informational and analytical skills, or which devalues or is actually hostile to a creative wholistic education. Numerous researchers are now insisting that parents and teachers should give more attention to the inspirational phase of creative imagination and should become more interested in the creative process itself rather than in the product alone.

Sources of Creative Imagination.

The source of creative imagination, energy, and intelligence is to be found within the psyche or central self of each person. Creative imagination is an intuitive function which springs from the deeper levels of our subconscious and finally culminates in the impulsive and rational actions of everyday life.

The psychologist Carl Jung has demonstrated that when this force of our collective unconscious becomes a living experience and is brought to bear upon the conscious outlook of an age, or on a human problem-solving situation, the event is a creative act which may be of importance for the future of mankind. For example, Dante's Divine Comedy and Goethe's Faust were attributed to unconscious creative forces and greatly influenced the time and perspective of those concerned. Likewise, Shakespeare referred to his own unconscious creative source as an "affable familiar ghost which nightly gulls him with intelligence" (Sonnet 86).

It is becoming increasingly clear that imagination and intuition are vital to human understanding and behavior. Although the usual popular opinion is that they are chiefly childish and immature tendencies of little value (except possibly to poets and artists), as we have seen, creative imagination is equally vital in all the higher grades of science, where it supplements the "rational" intellect and its application to specific problem solving. And it is now well documented that even physics, the strictest of all applied sciences, depends to an astonishing degree upon intuitive imagination working through the unconscious mind.

The primary source of creative thought and imagination lies within the unconscious personality itself and not in the self-conscious logical mind and rational efforts of the individual person. Accordingly, education must be a balanced one that also involves and attempts to develop one's unconscious processes and potentialities through such means as dramatic arts, music, play, invention, creative writing, and other wholistic activities.

Developmental Steps.

The development of creative imagination occurs naturally, but is greatly influenced by training and experience. The mental processes involved tend to be interdependent and cumulative in their effect on behavior and can be described by the following five stages of growth and development:

Stage One: Sensory Exploration. The major behavioral characteristic at this stage is playfulness, as demonstrated by the child's flexible and enthusiastic encounters with the environment. This begins shortly after birth and continues to be actively demonstrated through the preschool years. However, it is important that playful sensory exploration be continued by adults with creative and imaginative aspirations. For example, the outstanding jazz musician, Miles Davis, said that "I'll play it first and name it later".

Stage Two. Egocentric Speculation. During this stage, the person's thought and actions are dominated by fantasy and the exaggeration of intuitive impressions. The child tends to be carried away with belief in his or her magical powers and projects these views on the surrounding world. Young children create dolls, toy animals, and even imaginary friends and imbue them with life and special qualities. As adults, the constructive use of fantasy provides inspiration, escape, and transformational possibilities.

Stage Three. Personal Experimentation. During the early school years the child's natural inquisitiveness begins to result in a more systematic experimental "trial-and error" approach to the world. Initial visual and auditory images are now "put-to-test" experientially. For instance, one child said "Mommie, if my Sunday school teacher told the truth and people are made from dust and return to dust after they die - then somebody is either comin' or goin' under my bed". Similarly, another child reported that

Developmental ages and stages

the four seasons of the year were "Christmas, rabbit season, summer, and football." Of course, creative imagination must involve some degree of experimentation and refinement in order to be realized in productive form.

Stage Four: Symbolic Representation. This stage is usually reached by late childhood and is characterized by awareness, insight, and ingenuity. The person is now able to represent imaginative experiences in symbolic forms such as drawings, formulas, words, dance, paintings, sculpture and other forms. An imaginative verbal response at this stage is:

Question - "Does life really begin at 40?"

Answer - "It begins at 3 for me."

Question - "Why?"

Answer - "Because that's when school lets out."

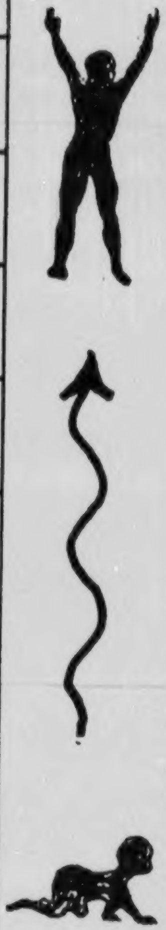
Unfortunately, many adults have never learned or been encouraged to play with symbols representationally-which has severely restricted the development of their creative imaginations.

Stage Five. Functional Verification. This stage is marked by the emergence of inventive, productive, and applied forms of behavior. In early adolescence and throughout adulthood, the person uses accumulated experience and "wisdom" to create new changes in self and the environment. If they prove fruitful and "work" in the life situation of the "inventor" they are the final culmination of creative imagination. For example, one young man creatively and imaginatively defined the word "character" as "the ability to carry out a good resolution long after the conviction leaves you."

- DevelopMENTAL ABILITIES -

- "Left-Brain" functions -

NUMERICAL	VERBAL	LOGICAL
Operational formulas	Proverbial wisdom	Hypothetical reasoning
Problem Solving	Poetry	Reversibility
Purchasing	Fluency	Rules & absurdities
Electronic calculation	Singing	Analogous "if-then" relationships
Time & estimation	Concepts & analogies	Multiple Classification
Computation	Rhymes & riddles	Conservation
Measurement	Basic vocabulary	Cause & effect relations
Counting & checking	Labeling & classifying	Categorization
Sets & groupings	Emotive expression	Serial ordering
Object correspondence (one to one)	Verbal imitation	Informational knowledge



- "Right-Brain" functions -

ORGANIZATIONAL	SPATIAL	INTUITIONAL
Self-direction & control	Written prose	Creative invention
Self-correction & reinforcement	Mapping & designing	Ingenuity
Accuracy & precision	Drawing	Imagination
Task completion & review	Figural Memory	Humorous inclination
Self-pacing & persistence	Comparative "likenesses & differences"	Divergent flexibility
Planning & overviewing	Tracing & copying	Insightful discovery
Following directions	Directional orientation	Inquisitive curiosity
Focused attention & concentration	Form constancy	Fantasy
Attitude & interest	Matching & sorting	Exploration
Task awareness & definition	Figural discrimination	Playfulness

Verbal behaviors such as this may require further consideration while material inventions in art, industry, or science are more self-evident of creative imagination being realized.

Implications.

For educational purposes it is important to be aware of stages of human development and what might be done to further the growth process of any child or person of concern. Although the human imagination is but one developmental function, it is the most important and spontaneously active one in that it taps both the conscious and unconscious levels of the mind. Therefore, psychologists such as Roberto Assagioli have concluded that imagination may need to be controlled or dispersed when excessive, to be trained when weak, and certainly to be directed and utilized because of its great potency and influence on other human behaviors.

Humans become unique persons through the development and utilization of their imaginative functions working harmoniously with their affection, will, and thoughts. While the intellect focuses attention on manipulating matter and relationships, creative imagination and intuition are evolutionary. If education is to be successful, it must not only inform but must inspire - and the development of imaginative functions is central to that end.

Ch. 3 DISCUSSION QUESTIONS & ACTIVITIES

1. Which of the mental operations involved in creative imagination have you most often engaged in?
2. What is the source of your own creative imagination? How do you get in contact with it?
3. Why is it important for educators to be aware of developmental ages and stages? Give an example.
4. Provide a sample learning activity which might facilitate development of "divergent flexibility" as specified on the chart presented in this chapter.
5. Discuss the implications of Assagiolis' conclusion regarding what should be done with imagination.

> "The only time my education was interrupted was when I was in school"
>
> - George B. Shaw

Chapter 4: THE EDUCATIONAL PROCESS

Creative imagination can be facilitated or impaired by special educational processes. Most parents and teachers hope to enhance mental growth and development. Education is essentially a process of facilitating natural growth - somewhat similar to that of a gardener attempting to raise distinctively beautiful flowers such as prize winning roses or orchids.

While the gardening analogy may not be entirely appropriate it aptly illustrates the major steps involved in the growth process itself. These are preparation, incubation, illumination, realization, and regeneration. Each of these will be considered in some detail. Some of these steps have been discussed in depth in Graham Wallas' book THE ART OF THOUGHT.

Preparation.

The first step in growing or developing anything is to create a positive environment for such growth to occur. This requires weeding out destructive influences, selecting the appropriate ground or soil for planting and seeding, tilling, and caring for the germ that has been selected.

In schools this begins with the positive personality, attitude, and goals of the teachers immediately involved. Above all, teachers must value the development of creative imagination and thinking in their own selves, and treasure and promote it in the children they work with. Also, teachers must not be threatened by divergent, imaginative thinking and other expressions of creative abilities in their pupils. And they must become more willing to provide their students with open, flexible, individualized opportunities for creative development.

Of course, preparation also requires instruction in the basic skills and help in the acquisition of relevant knowledge and experience. Many schools emphasis convergent thinking and the acquisition of lower level cognitive skills and facts that contribute to the intial preparation for creative thinking and imagination. But this is inadequate since we have seen that the primary unconscious processes must themselves be prepared for the more advanced stages of development to be achieved. Generating interests, motivation, and enthusiasm are crucial elements in preparation for all kinds of learning.

Incubation

The second step in facilitating creative imagination is incubation. This is a time of "internalization" of acquired knowledge and experience whereby the information and data is gradually assimilated and integrated without undue interference or distraction. Fertilization has taken place and germination begins with self-nourishment of interacting symbolic images, ideas, and latent potentialities.

During this time the child, like the planted seed, requires protection, security, and continued care. Parents and teachers must learn to be patient with children to give them time, space, and opportunity to grow and develop in accord with their own maturational timetable. A proper home and school environment is one that provides initial stimulation and adequate time to reflect, to daydream, to be open and silent, and to value the growing interplay of thoughts and action.

It is essential, of course, that the necessary skills, facts, and information be taught during the preparation period since incubation and reflection must use such kinds of sensory input. But too many facts can actually constrict and narrow one's creative imagination and thereby restrict thinking and problem solving. Most persons have a substantial fund of factual information on which to build, but tend toward impulsive actions and lack the receptive attitude and personality attributes to allow the incubation process to proceed in a slow and deliberate manner.

Maria Montessori advocated that schools provide a "quiet time" when pupils should learn the value of silence by closing their eyes, being still, and reflecting on their experiences. The psychologist, Ann Anastasi, also feels that since creative solutions are more likely to occur during periods of relaxed dispersed attention than during periods of active concentration on the problem, the educational program must be sure to include periods for relaxed, dispersed, and receptive awareness to take place. Other educators have successfully experimented with biofeedback, focused attention, and varied forms of meditation to produce a reverie-imagery state that permits both the conscious and unconscious mind to incubate and mentally brew the arising sensory impressions.

As we have previously discussed, novel and exaggerated sensory date and factual information are more easily processed and incubated. Educators at the Wisconsin Research and Development Center for Cognitive Learning found that creative imagination and problem solving is in part a voluntary act that can be promoted by the schools striving to develop creative awareness in children; this can be accomplished through the use of such novel educational techniques as brainstorming (generating a long list of fanciful problem solutions), attribute listing (mentally changing parts of objects and ideas to create new ones), and various idea checklists.

An example of a novel idea checklist is to present the learner with a sheet containing the following aids for helping a person think of physical changes that might be made in an object such as an automobile, a bicycle, or a house:

- Change the design or style.
- Change the color.
- Change the materials.

- Change the shape and/or size.
- Change by rearranging parts of the object.
- Add something to or subtract something from the object.

If a learner is adequately prepared and properly stimulated with novel thoughts and exciting information this material will incubate well. And eventually, promising mental images and ideas will be generated.

Illumination.

When the astronaut, Neil Armstrong, from his vantage point in the Apollo spacecraft, looked back and saw the earth in space he felt something strange happen to him and he said "I'll never be the same!" Armstrong had experienced an insightful illumination which resulted in a unique awareness of the interrelatedness of man and the universe. All of a sudden his previous scientific training and knowledge fell into place because of a highly unusual "happening".

Illumination means mental clarity or insightfulness. What was once vague, confusing, or misunderstood now seems to fall into place and become comprehendable and meaningful. This is sometimes referred to as the "Ah ha!" experience. When a flower bud is nourished and stimulated by the light of the sun and the nutrients of its environment, it begins to unfold and take form and shape.

As a person gains insight, his or her behavior changes. Previously strange symbols and shapes seem to "fall into place" and the creative imagination begins to see relationships and possibilities that did not previously seem to exist. The transforming elements in this process appear to be movement and warmth. As long as the person continues the search toward the light of understanding, it is inevitable that growth will occur.

In most cases, illumination is a spontaneous association of new or novel images and ideas. The person feels that "I've got it" and is moved to further contemplation and action.

In such a way the scientist envisages a new model, the poet apprehends the proper metaphor, and the child grasps the joke or pun.

Educationally, illumination appears in an atmosphere of acceptance and permissiveness where free association, mental play, and novelty is openly encouraged. It is developed and facilitated when the person is taught to value and to record his or her insights - however incomplete or fleeting they may seem to be. As the child learns to draw, write, tape record, and to explore these dynamic images, he or she begin to refine and explore them in more detail. In such a way, practical breakthroughs are made and new ideas are born.

Actualization.

Eventually, if all goes well, the flower bud is actualized as a blooming rose and the symbolic image is crystalized into dynamic form - be it art, music, science, literature, or the practical invention of everyday life. Actualization is fruition, attainment, and achievement.

It is frequently said that the goal of education is self-actualization. Hermann Hesse has written that when we move from potential to deed, from possibility to realization, we are becoming true human beings. We begin the journey toward self-actualization and fulfillment as children, but the search continues throughout our lives. Even as mature adults, we continue to learn and discover new things about ourselves and our world, and our dreams, imagination, and deeds change accordingly. An anonymous poet has written:

> "Like a flower I do grow,
> striving for the light
> and joy of becoming
> that which is hidden within me."

When creative imagination is actualized into dynamic form within the human mind, the person begins a transformational process to self-realization. In this way the powerful idealized image becomes the real in life.

Within the school, creative imagination is actualized in numerous products. The child conveys his personal and family myths and images into storybook form, engages in dramatic play and language, transforms and recreates cartoons and humourous expressions, conducts innovative science explorations, and produces industrial and artistic designs and forms. What is required is an expectation that actualization will occur under proper provision and encouragement within the educational environment and curriculum.

Regeneration.

Creative imagination culminates in the regeneration of the person and the society in which he or she lives. To a considerable extent we are the products of our imaginations and our lives and civilizations evolve accordingly. The truly creative image is a seed for continued development.

When the rose blossom is actualized in full beauty, it has a lasting influence on those who behold it. Nor does it completely die and wither away since the actualized flower transmits its seed to be regenerated in new or varied form. So, too, is the gardener caught up in the cycle of planting, fruition, and regeneration. The growth and full actualization of his plants restores his faith in the value of the entire process, enhances his feelings of personal power and success, and challenges him to prepare again for new plantings and idealized forms that are yet-to-be.

We are all captivated by the magic of our success. The child who receives praise and acknowledgment for participation in puppetry, language experience stories, puzzle play, singing, eurhythmic movement, sculpture, or whatever creative experience is chosen, will continue to generate and explore ever new forms of creative imagination.

Education then is an on-going process of developing creative imagination and the harmonious integration of other human functions. It should involve the total person and culminate in increasing self-actualization and personal regeneration. To accomplish this end, successful education requires supportive parents and teachers who themselves are aware of the power of the human imagination to teach and transform the person.

-THE PROCESS OF CREATIVE THINKING -

I. PREPARATION: "Free Association"

- A. Key words (Billy Goats, Troll, E.T., bugs, oil, peace, etc.)
- B. Topic: "The Three Billy Goats Gruff" (of "Dinner for Two").
  "The Extraterrestrial" (of "How did a guy like me get stuck in a place like this"), etc.
- C. Recalling and "hitchhiking" on all available information.

II. INCUBATION: "Reflective Thought"

- A. Exaggerated visual imagery and sensory impressions.
- B. Spontaneous linguistic expressions.
- C. Intuitive feeling.

III. ILLUMINATION: "Insightful Understanding"

- A. Categorization of words and ideas.
- B. Wonder questions (who, what, where, when, how, why).
- C. Stating the main idea.

IV. ACTUALIZATION: "Productive Enactment or Problem-Solving"

- A. Sequential organization and integration of information.
- B. Expressive speaking, dramatization, drawing, writing, etc.
- C. Divergent thoughts and idea.

V. REGENERATION: "Transformational Changes"

- A. Summary questions.
- B. Novel, playful, flexible adaptations.
- C. New product (characters, story, invention, etc.)

An Imaginative Example.

The process of creative thinking is summarized in the chart. An example of the process being used with young children is the imaginative transformation of the story "The Three Billy Goats Gruff."

The title of the story is placed on the chalkboard and children are asked to suggest words that go with it. These are written on the board as given and defined and discussed. The teacher then tells or reads the traditional story. A picture book might also be used to involve the children in relating to the figures, asking questions, and sharing information.

Then the teacher asks the pupils to close their eyes and reflect on the story by visualizing what the different goals and trolls might look like, how they might feel, etc. Music (such as "The Hall of the Mountain King") could also be used during this time.

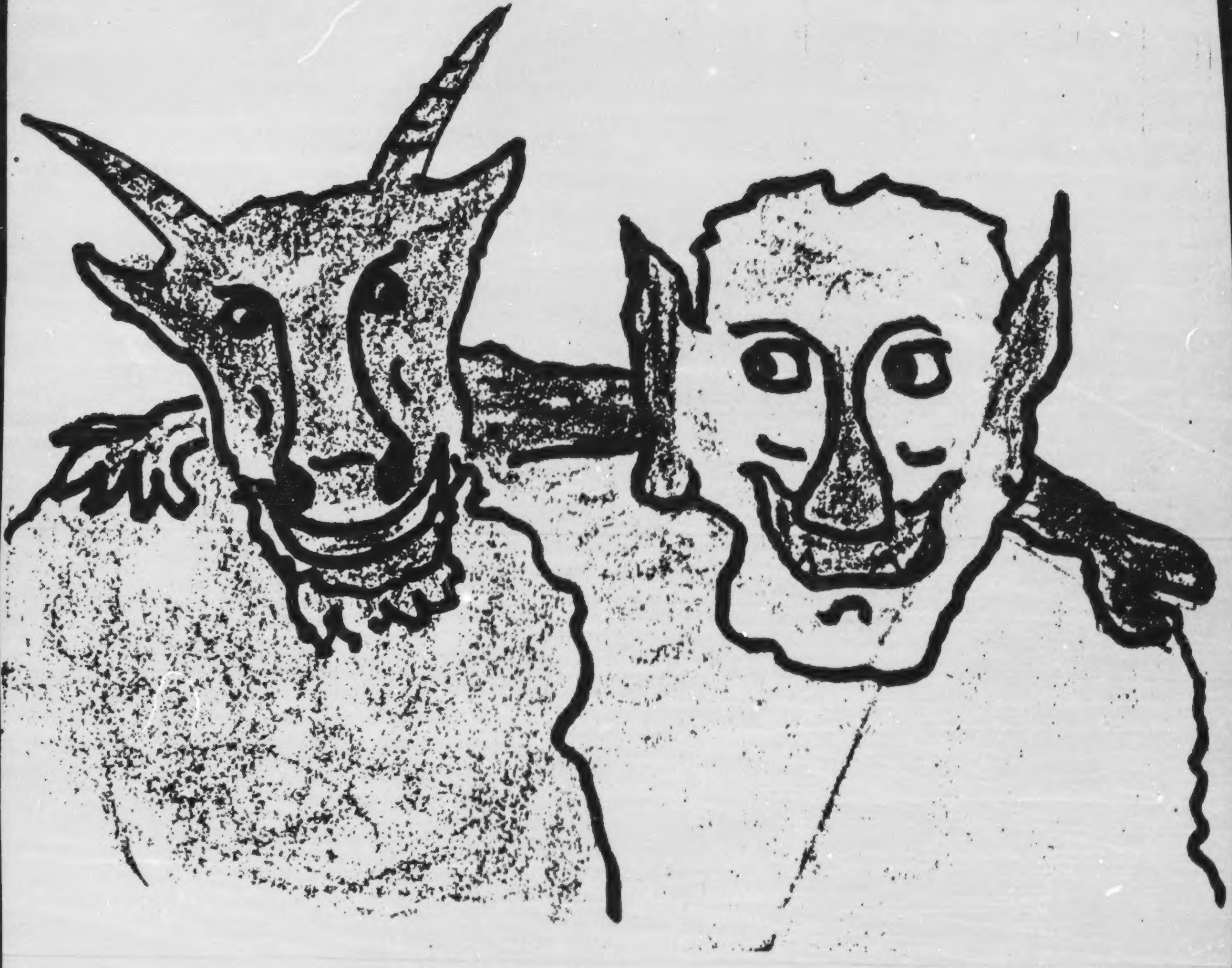
During the "illumination" phase pupils could categorize the words and ideas on the board, discuss related concepts (kinds of bridges, foods, etc.), respond to the "wonder questions" ("how do we know what troll's eat?", "why are the goats crossing the bridge?"etc.), and restate the main ideas involved.

Productive enactment of the story might include sequencing word or picture cards, the use of puppetry or other dramatization, and the divergent expression of words and ideas.

Finally, pupils would be asked to change or transform the story and to consider questions such as:

. Imagine what would happen if the roles of the troll and goats were reversed?

. Look at the picture card "A Friendly Dinner for Two" and rewrite the story.



"A Friendly Dinner for Two"

Ch. 4 DISCUSSION QUESTIONS & ACTIVITIES

1. Think of a highly effective teacher you have had. Describe how this teacher "prepared" you for learning.
2. What might be some of the difficulties in establishing an "incubation-reflection-silent time" in your class?
3. Describe a personal insightful or illuminating experience. How did it come about?
4. Give an example of how a friend has actualized his or her unique potentialities.
5. How might a child be renewed and regenerated through participation in music or the dramatic arts?

"The charm of imagination, and the power it gives to the individual to transform his world into a new universe of order and delight, makes it one of the most treasured of all human capacities"

- Frank Barron

Chapter 5: INSTRUCTIONAL MODELS

Creative imagination can be developed and directed through appropriate instruction. Researchers such as Jacob Getzels and Philip Jackson have demonstrated that there is a low correlation or relationship between re-creative imagination (the ability to reconstruct symbols and ideas into new patterns) and intelligence tests. They have also shown that all children have potentialities for creative performance, boldness in thinking, and free rein to their imagination. To promote these abilities, schools need to develop a more positive attitude toward the importance and values of creative thought and imagination - and to facilitate them within the curriculum.

The social critic George Leonard has also written that as a nation we are terribly concerned about the reading and mathematics achievement scores of school children, yet we have not yet seriously considered a curriculum that would both improve these scores and also teach the transformational skills necessary for human survival. However, there are many instructional models and programs which have proven successful in developing creative imagination and related skills. Some of these will be summarized here.

Receptive and Focused Attention.

Recent studies by neuropsychologists show how verbal and attentional functions are enhanced through imagery training and self-verbalization strategies. The basic preparatory step in developing creative imagination is to train the person to openly reflect, concentrate, and attend to whatever images may come. Some educators, such as Gay Hendricks and Russel Wills, refer to this as the "centering" process. This usually begins through relaxation and body awareness instructions and lessons.

Several years ago William Linden studied the effects of reflective meditation training on the cognitive and affective functioning of third grade children. He divided the children into an experimental and control group. The experimental group consisted of 26 pupils who received training twice a week for 18 weeks. The meditation program trained the individual to focus his attention on an object or image and to resist distraction from other sources of stimulation. The results showed that the experimental students became less anxious, more independent, and improved in concentration and self-control.

Another similar program involved children and parents using relaxation tapes in a home training program. A total of 13 hyperactive children were provided with 20-minute, daily home training sessions for three months. The tapes emphasized visual imagery and significantly reduced anxiety and increased attention on criterion tests.

Recently, numerous forms of relaxation, centering, and reflective meditation have successfully been used with all kinds of persons with learning and behavioral problems. People are being taught to quiet themselves, to reduce their bloodpressure, to slow their breathing rate, to reduce stress and test anxiety, to open themselves fully to sensory stimuli in their environment (such as natural sounds or important messages), to learn more quickly, and to recall more effectively.

One clinical example is of a 9 year old boy who was highly distractible. The school psychologist, Edward Workman, demonstrated a highly effective training program consisting of six 30-minute sessions within the school setting. The boy was taught to relax and imagine himself sitting quietly, attending to task, and engaging in self-rewarding activities. Imagination training was continued in the regular classroom with highly significant positive changes in behavior.

Sharpening The Image.

Once the person has been prepared through relaxation and centering activities, most educational programs shift to sharpening and enhancing the image. For example, contemplate trying to read without picturing the story, doing a geometry problem without imagining the symbols in your head, or remembering something without seeing important associations. A number of successful methods have been devised to sharpen sensory images.

Betty Edwards is an art instructor who has experimented with several techniques for helping pupils to draw. In her remarkable book, DRAWING ON THE RIGHT SIDE OF THE BRAIN, she discusses the importance of helping the person to concentrate on pictures and sensations rather than words and labels. By inverting drawing models of pictures and objects it becomes difficult for the left brain to label and classify them. Consequently, the right brain patterning function comes into play and the pupil can concentrate on lines, form, and sensory qualities of the model. By such methods, the direct perceptual image is strenthened and results in dramatic improvement in drawing skills in a very short time.

As a result of his stage work with children over many years, Art Linkletter concluded that the "imagery muscles" of a child's mind could be exercised and developed in the same way that his biceps are built. However, he found that motivation and practice were essential for creative imagination to occur. In this respect, he discovered that the use of "whopper" stories, tall tales, jokes, and humorous incidents helped to sharpen and develop mental images.

Two outstanding memory experts, Harry Lorayne and Jerry Lucas, have stated that the secret in memory training is to develop silly, ludicrous visual images which link key ideas to a picture symbol code. Very young children have no trouble using their imaginations and forming ridiculous pictures; they not only do it easily but think it is a lot of fun. An example of this technique is in training a young child to correctly pronounce the word "caterpillar" by first having him picture a cat chasing crawling things up a pillar.

Visual imagery training has also been used to help learning handicapped children to read and to spell. For example, Barbara Cordoni taught a 12 year old boy in the sixth grade to improve four grade levels on reading tests as a result of one-half year of visual imagery training. The boy also improved his spelling grade from "F" to "A". Her secret was to have the child associate visual images with words and then to recall and reproduce the words through revisualization. Her technique also included drawing the word pictures and configurations including seeing letters in their proper location and then having him write the word on spelling paper.

Synchronized Learning.

Most instructional models combine relaxation, focused attention, visualization, multi-sensory materials, and positive reinforcement. The integration and synchronization of sensory, affective, cognitive, and intuitive functions of the human mind make for more effective learning.

In one pioneer experiment, Stanley Krippner involved 48 children in a creative imagination program extending over a five week period. Among other things, the program included perceptual motor movement activities, relaxation, visualization, experience stories, book writing, and self-reinforcement techniques. The average improvement was five and one-half months on standardized reading tests with one pupil making a two year gain.

In a similar study, Gerald Jampolsky used focused attention, centering, and sensory motor stimulation to aid children with learning disabilities who were making number and letter reversals. By using visualization and kinesthetic training he was able to completely eliminate the reversal problem in all children in relatively short time.

Receptive and focused attention can also be enhanced in most regular school programs through the use of systematic training procedures. For example, the form on the following page presents some personal strategies for developing attention and concentration. The assignment might be any curricul subject such as reading, spelling, math, or science. Or it might also be used with the dramatic arts, music, shop and construction projects. The four steps of task orientation, instructional modeling, self-directed instruction, and self-evaluation are clearly specified. A very important part of these strategies is when the pupils visualizes completing the assignment in an orderly way. Some persons need considerable help in visualization and many of the creative imagination activities presented in this book are valuable in such training. If the learner is also trained to reward himself or herself with points or tokens for completing each task, the system becomes more effective. This combination of task analysis, visual imagery, and self-reinforcement is increasingly being used in both regular and special education programs.

As the cartoon implies, self-evaluation is a critical step in the creative process. However, it is important that the person not be overly critical to the point where it may actually interfere with the future production of novel thought or action.

PERSONAL STRATEGIES
for
DEVELOPING YOUR ATTENTION AND CONCENTRATION

Pupil's Name____________________ Assignment____________________ Date______

	yes	?	no
I. TASK ORIENTATION:			
1. I have carefully listened to the teacher's explanation of this assignment and what I am to do.			
2. I have verbally restated the topic and purpose of this assignment and how I am to proceed.			
3. I have briefly scanned and previewed the instructional material in order to better understand what I will be working with.			
II. INSTRUCTIONAL MODELING:			
1. I have carefully observed the instructional model presented by my teacher and I understand how the work is to be done.			
2. I have verbally explained to myself how I will proceed to imitate the instructional model and exactly what I need to do.			
3. I have closed my eyes and have carefully visualized myself completing the assignment in an orderly way.			
III. SELF-DIRECTED INSTRUCTION:			
1. I have asked myself (or written out) the most important questions which I need to answer in completing this assignment.			
2. I have organized myself by getting everything together for this assignment and I have noted (marked, highlighted, outlined, etc.) my progress.			
3. I have talked to myself and guided my progress step by step.			
IV. SELF-EVALUATION:			
1. I have completed my assignment and compared and checked it with the instructional model.			
2. I have noted and corrected my errors and mistakes.			
3. I have praised and rewarded myself for learning and completing my assignment.			

V. SELF-IMPROVEMENT PLAN:

What I need to do to improve myself is to _ _ _

("Self Evaluation")

These methods have also been used with older pupils. Dorothy van den Honert described her successful junior high school program which emphasized neuropsychological integration of varied sensory inputs. For instance, one boy was provided with special linguistic lessons using stereo earphones and dual tape recorders. Baroque music was presented in his left earphone for transmission to his right brain. At the same time he received language training through the right ear which was transmitted to his left hemisphere with amplification. He was also provided with visual sequencing training of words and symbols. In one year of 65 lessons he gained four years on a standardized reading test.

The Lozanov method synchronizes music and positive suggestions and was developed in Bulgaria. Sheila Ostrander has reported that this method uses creative visualization, boroque music, and body contrrol or autogenic lessons. It appears that Baroque music is unique in that it integrates right and left brain stimuli and facilitates both conscious and unconscious recall, improves alertness, and improves concentration. Studies with first grades disclosed a significant increase in language learning over a short time period. Other studies, showed improvement in older students and athletes who were taught to visualize and synchronize mind-body movements.

In Los Angeles, Beverly Galyean taught teachers of 10th grade students to use guided imagery to improve writing skills. For example, when pupils were trained to carefully visualize and identify with a rose projected on a screen, they were later able to recall the visual image and to draw and write about it with much improvement. Significant gains were recorded on pre and post tests of composition skills. In addition, students became quieter and more attentive, and motivation and interest in writing also improved.

Several government study panels have also verified the importance of creative imagination and the role of the arts in education. One such report cited programs that integrate creative art activities with basic instruction which improved reading performance at twice the normal rate. The value of innovative programs such as these has been well established and could well be emulated by all concerned.

There is considerable evidence supporting the value and effectiveness of creative imagination programs in education, arts, and science. However, the development of creative imagination is also increasingly recognized as vital for improving performance in sports and athletics, health and physical fitness, personal development, and business and industry. Recently, a professional critique by Dan Dorfman of university business school's Master of Business Administration (MBA) degree programs concluded that these students were being overly trained in methodology at the expense of their ability to effectively use their "intuition and vision." When business leaders such as these verify the need for training and development of intuitional and visionary abilities and caution us about the limitations of methodological and mechanistic learning, most practical minded persons become interested - because they begin to understand the effect of such training on their own lives.

Whoever we are and whatever we do, we all generate the power to change our lives in accord with our creative aspirations. Our personal images and visions of what we might become are powerful intuitive forces that help to shape our destiny. Creative imagination can be developed, focused, synchronized with other human abilities if we have the personal will and determination to do so.

A Taxonomy of Educational Goals.

Great poets, philosophers, and psychologists have long extolled the value of developing creative imagination. For example, Carl Jung advocated teaching persons that the collective unconscious mind consists of the inherited potentialities of human imagination which should be used and developed. Another psychologist, J.P. Guilford, demonstrated that the structure of human intellect includes divergent thought and transformational abilities which an imaginative and challenging teacher could develop through productive thinking exercises. For instructional purposes it is helpful to consider a taxonomy which classifies educational goals in a pragmatic format.

Nine major goals useful in teaching creative imagination and problem solving skills are presented below in a developmental hierarchy. These skills are also classified on the accompanying chart as follows: The psychomotor (body) domain includes sensing, playing, and renewing skills. The cognitive (mind) domain includes thinking, communicating, and transforming. The affective (spirit) domain includes feeling, relating, and idealizing.

These nine goals are further differentiated by levels of development. For beginning instruction, Level I focuses on intrapersonal ("self") skills such as learning to feel good about oneself. The second instructional emphasis is Level II which specifies some critical interpersonal ("social") skills such as communicating with others. Level III presents some important transpersonal ("universal-world") skills such as being able to idealize what the world might become some day.

On the chart, each of the major skills is listed with common subskills in parentheses. Related curricular subject matter areas are listed in the lower right hand corner of each cell.

The following pages discuss each skill. First a poetic illustration is given. This is followed by a definition of the instructional goal. A brief rationale for the goal and related objectives, and some educational strategies, concludes each section.

CREATIVE IMAGINATION & PROBLEM SOLVING SKILLS

- an instructional taxonomy

INSTRUCTIONAL GOALS	LEVEL I: INTRAPERSONAL ("Self") Skills	LEVEL II: INTERPERSONAL ("Social") Skills	LEVEL III: TRANSPERSONAL ("universal") Skills
"SPIRIT" AFFECTIVE DOMAIN	3. FEELING (responding identifying willing) - poetry & contemplation -	6. RELATING (cooperating sharing loving) - social sciences -	9. IDEALIZING (valuing dreaming aspiring) - philosophy & music -
"MIND" COGNITIVE DOMAIN	2. THINKING (speculating fantasizing originating) - science & math -	5. COMMUNICATING (speaking reading writing) - language arts -	8. TRANSFORMING (designing theorizing changing) - creative & industrial arts -
"BODY" PSYCHOMOTOR DOMAIN	1. SENSING (assimilating intuiting orientating) - art & health -	4. PLAYING (adapting exploring inventing) - sports & drama -	7. RENEWING (growing evolving recreating) - outdoor education & dance -

1. SENSING: "Imagination is a power in the mind which assembles images by means of sensations" - Mary Warnock

- To be able to imaginatively experience varied sensory impressions through physical contact with the environment.
- The basis of all creative imagination is to be found in personal sensitivity to and awareness of environmental sounds, sights, smells, textures, and movement. Pupils need to attend to, and integrate, the forms, patterns, and rhythms of their time and space.
- Get in touch with body rhythms such as muscle movements, breathing rate, heartbeat, etc. Listen quietly to natural sounds in the immediate environment. Smell foods and flowers. Touch and explore things while wearing blindfolds. Observe, draw, and construct things upside down or backwards. Taste differant foods. Imagine that you are an astronault or an animal exploring a new sensory environment, etc.

2. THINKING: "An image is a conscious abstract representation of thoughtful intent" - Jean Paul Sarte

- To be able to understand and imaginatively interpret the patterns and relationships between things and concepts.
- Creative thinking and problem solving requires the comprehension, analysis and synthesis of knowledge or information followed by speculative and novel application. Productive creative imagination is usually evaluated and verified with time and experience.
- Figural thought focuses on patterns and pictures such as cloud formations, designs, images, dreams, and objects. Semantic thought manipulates words such as novel questions, verbal expressions and definitions. Symbolic thought involves formulas, mathematical expressions, codes and metaphors. Imaginative thinking strategies should involve figural, semantic, and symbolic activities such as drawing, storytelling, computing, etc.

3. FEELING: "We are all worms but I do believe that I am a glowworm" - Winston Churchill

- To be able to experience feelings and emotions and to imaginatively get-in-touch with one's heart and creative spirit.

- Imagination is an inner power which helps us to feel and shape reality. The feeling of well-being and personal significance stems from our awareness of and identification with our "self" and the natural forces of the universe.

- Explore personal feelings, intuitions, and impressions about things. Provide quiet/silent times for meditation and self-contemplation. Imaginatively explore the feelings of others such as friends, aliens, pets, etc. Role play the possible feelings of artists, poets, and other persons who have created something of value. Engage in creative laughter and humerous expressions such as jokes, cartoons, comedy films, etc.

4. PLAYING: "I'll play it first and name it later" - Miles Davis

- To be able to enjoy creative and imaginative play and fantasy.

- The human mind craves novelty, play, and mirthful diversion. Playful discovery and invention increases self-knowledge and creative problem solving. Play is intrinsically rewarding and stimulates learning.

- Provide ample opportunities to playfully manipulate, explore, and experience the environment in varied and imaginative ways. Promote dramatic portrayals of stories, fantasies, puppet and talent shows, etc. Use popular games, educational toys, video-electronics, sports, and teams as part of the educational process. Encourage pupils to create and teach new games, etc.

5. COMMUNICATING: "The right words excite the imagination"
- Norman Cousins

- To be able to effectively communicate with others through the use of oral, written, and body language.
- The ability to express one's thoughts, feelings, aspirations, and imaginative ideas is a fundamental part of education. Accumulated wisdom, cultural values, and problem solving techniques are transmitted through various kinds of spoken and written languages. Creative writing and speaking require the integration of imagination and reasoning.
- Facilitate verbal communication and expression of life experiences, interests, and concerns. Encourage the imaginative exchange of ideas, dreams, and novel associations. Value the production and expression of divergently creative imagination. Promote written language expression activities - recognizing spelling and grammatical expression as secondary priorities. Provide time for story telling, oral reading, charades, drama, and other forms of creative communications.

6. RELATING: "We live by admiration, hope, and love"
- William Wordsworth

- To be able to socially relate to other persons in cooperative, helpful, and caring ways.
- Much of the success of personal, family, and community life is determined by how well persons get along with each other. Being able to imaginatively predict the consequences of one's actions is a critical social skill.
- Model and reward cooperative projects, activities, and behavior. Plan home, school, and community improvement and responsibility programs. Role-play conflict resolution, empathy, and sharing. Engage pupils in challenging and imaginative lessons on providing for the common good, community welfare, peace, history, civics, etc.

7. RENEWING: "Live naturally"

- Henry David Thoreau

- To be able to imagine and become renewed and to restore one's vital energies.

- Human life is a continuous cycle of self-creation, growth, and change. Persons need to learn how to re-create themselves through such means as healthful life styles, diet, exercise, humor, meditation, and purposeful involvement.

- Search out and explore varied growth experiences and opportunities. Encourage outdoor encounters with nature such as walking, gardening, camping, etc. Conduct field trips and travel excursions to parks, hospitals, and new places. Provide daily exercise breaks and activities.

8. TRANSFORMING: "From this hour I ordain myself loos'd of limits and imaginary lines, going where I list, my own master, total and absolute"

- Walt Whitman

- To be able to imaginatively change and realistically transform oneself or a thing into something new or different.

- Persons are engaged in a continuous creative process of adaptation and environmental change. We constantly design and construct objects, buildings, and new life styles. Productive problem-solving requires contemplating existing patterns and relationships and transforming them to meet new and emerging needs and demands.

- Challenge pupils to suggest imaginative changes or transformations of themselves, their family, school, community, and the larger world in which they live. Reward divergent and innovative ideas and products. Provide opportunities to build, construct and redesign models, tools, appliances, games, and inventions.

9. IDEALIZING: "Ah, but a man's reach should exceed his
grasp, or what's a heaven for?"
- Robert Browning

- To be able to imaginatively propose personal and social goals and valued ways-of-life.
- Civilization is a product of the human imagination and cooperative effort. For personal peace-of-mind and human survival, it is essential that we imagine ourselves significantly involved in creating our lives and the ideal world in which we wish to live.
- Encourage and explore pupil hopes, dreams, aspirations, and values. Help pupils willfully purpose and pursue goals and ideals. Celebrate personal and social accomplishments and occasions. Cultivate personal hopes, wishes, dreams, and aspirations.

. . . . . .

It should be recognized that the above taxonomy is just one of many ways of classifying creative imagination and problem solving skills. This taxonomy, like most others, contains some overlap and requires integrated instructional strategies. However, it does present some meaningful goals and possible objectives for use by the interested teacher.

Ch. 5 DISCUSSION QUESTIONS & ACTIVITIES

1. Use the Developing Your Attention & Concentration form with a pupil and discuss the results.
2. Present your class with an "upside-down" drawing assignment (ala Betty Edwards). How does their work compare to their usual right-side-up drawings?
3. Share an exaggerated tall tale that you have long remembered. Why did this impress you so much?
4. Have your class enact a favorite fairy tale. Describe some of the new or different behaviors expressed by your pupils.
5. Use the Creative Imagination and Problem Solving Skills taxonomy to rank order the educational goals for one of your pupils. Explain your top priorities.

"Every act of creation is first an
act of destruction"

- Pablo Picasso

Chapter 6: RESOURCE MATERIALS AND STRATEGIES

Every new creation arises from the dust and residue of prior experience. We grow, change, and evolve insofar as we are able to constantly adapt and reorganize our perceptions and impressions. This requires concerted effort and will to dust the mental cobwebs from our eyes, to set aside preconceptions, and to enthusiastically encounter the possibility of new forms of being or becoming.

The regular school curriculum seldom offers adequate resources or instructional materials for helping pupils to develop their creative imaginations. However, most such materials are not elaborate and tend to consist of a series of strategies which may be implemented in lesson form. A representative number of those will be considered here.

Commercial Sources.

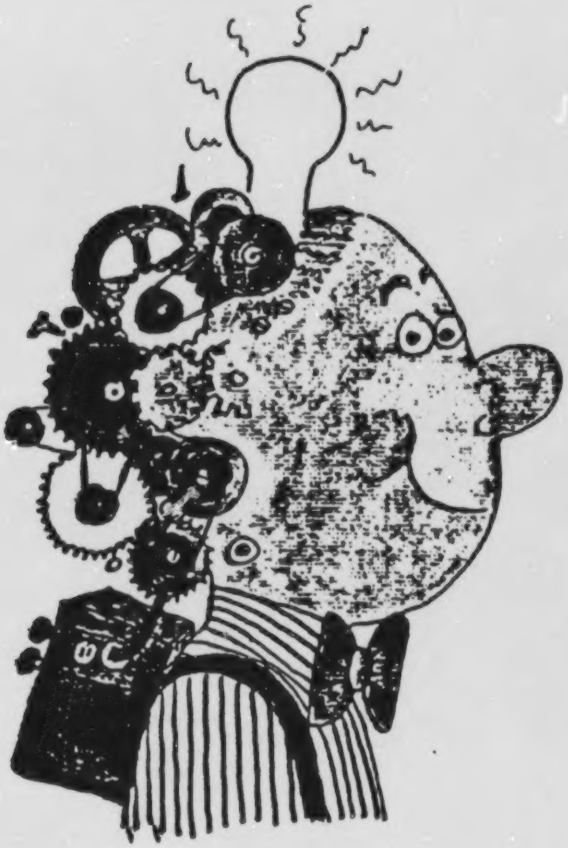
There are no all-encompassing successful commercial programs, kits, or curricula for developing creative imagination and other intuitive abilities. But several excellent sourcebooks and reference materials do exist and have long been used by teachers and others concerned. In addition to the commonly used fantasy stories, dramatic plays, children's literature, records, magic kits, and art materials of all kinds, some special resources will be commented on below.

The Dr. Seuss Books are very special and easily available in all libraries and bookstores. This series of highly stimulating and imaginative stories includes CAT IN THE HAT, O SAY CAN YOU SEE, O THE THINKS YOU COULD THINK, and numerous other volumes which evoke vivid visual and auditory images in persons of all ages. These books are typical of the best that be used directly with pupils with supplemental tracing, coloring, writing, and art projects. The humor and imagery in such creative poetry books as Shel Silverstein's WHERE THE SIDEWALK ENDS and A LIGHT IN THE ATTIC will stimulate children's imaginations and often result in their own creative art work and poetry.

Another classic is Richard De Mille's PUT YOUR MOTHER ON THE CEILING. This is a collection of children's imagination games for developing listening skills, mental images, language, writing, and story models. It is also an excellent guide for dealing with the feelings and concerns that children bring to school with them. This material is a great sourcebook for ideas for developing the spontaneous imagination of young learners. De Mille dramatically demonstrates how "imagining" can change behavior as effectively (or more so) than the usual rational cognitive materials used in the classroom.

There are many good textbooks available for use by teachers. Several popular paperback books are available through bookstores. Gloria Castillo's LEFT-HANDED TEACHING contains a unit on imagination consisting of eleven different lessons; the same book also contains fascinating lessons in related areas of sensory awareness, communication, art, nature, space, and coping with aggression. Jack Canfield and Harold Wells are the authors of 100 WAYS TO ENHANCE SELF-CONCEPT IN THE CLASSROOM which includes fantasy lessons for helping pupils to become successful, to plan ahead, and to capitalize on personal strengths. For adults, the book VISUALIZATION by Adelaide Bry is especially effective in presenting ways and means, scripts, and self-directed activities for developing positive mental images and creative behaviors.

Of course, some packaged commercial materials have proven of value. Among these are the PEACE, HARMONY, AND AWARENESS tapes consisting of six audiocassettes, seven color photographs, and a teacher's manual for guided fantasy stories, developing visual imagery



Stimulating creative imagination

and self-control. The PRODUCTIVE THINKING PROGRAM contains five separate kits for developing creative inquiry skills and related problem-solving techniques and includes numerous lessons, charts, teacher guides and manuals. Additional resources of academically related instructional materials are listed and described in detail in my book DEVELOPING COGNITIVE ABILITIES: TEACHING CHILDREN TO THINK.

Imagination Time:

As with other kinds of learning, children need guidance and structure about what they are expected to do and just how they are to proceed to begin to feel and think creatively. One major strategy for implementing such a program is to establish a "creative imagination time" as a regular part of the daily classroom schedule. To begin, it is necessary for pupils to learn the values of silence and reflection for developing imaginative thoughts and ideas from their own intrinsic sources, rather than from continual reliance on external stimulation. This frequently starts with some form of integrated relaxation and focused attention activity such as the following:

BUTTERFLY

Purpose: The purpose of this exercise is to help you learn to increase your ability to relax, to attend, and to visualize pictures in your mind by using your imagination.

Posture: Sit or lie down in a quiet and relaxed position with your eyes closed.

Meditation: As you remain very quiet, you find that you will begin to relax all over. Just let yourself go and remain very still and let all the tenseness drain from your body. As you do so, you will begin to breathe deeply, which will help you to relax even more. You are already feeling very good throughout your entire body and you are increasingly aware of your breathing. Now concentrate on your exhalations and focus on the deep sense of relaxation that you experience with each breath that leaves your body. Very good, just let yourself go and relax even more.

- "IMAGINATION TIME" LESSON MATERIALS -

* Steve Halpern Spectrum Suite: An excellent stereo tape cassette featuring music of the colors for meditation. Source: Halpern Sounds, 620 Taylor Way #14, Belmont, Ca. 94002.
* Holst- The Planets: Another tape recording for meditation ("Venus" is especially good). Boston Symphony- William Steinberg. Source: Record stores.
* Imagine: A delightful board game based on fairy tale characters which stimulates the powers of the imagination. Source: Arden Press, Box 844, Huntington Beach, Ca. 92648.
* Imagination and Language: A workbook of lessons by Linda Wermuth for use with junior and senior high school students. Source: Prentice-Hall Learning Systems, Inc. P.O. Box 47X, Englewood Cliffs, N.J.
* Tickle My Fancy: A series of creative writing, poetry, and art activities by Julia Alarie and Elizabeth Coulon. Souce: The Monkey Sisters, 22971 Via Cruz Laguna Niguel, Ca. 92677.
* Images of Fantasy: An outstanding collection of twelve full colored transparencies for stimulating creative writing and thinking by Sara Jenkins. Source: Milliken Publishing Co., St. Louis, Mo.
* Developing Thinking Skills: A cleverly illustrated workbook of imaginative and challenging problems by Hollis Green. Source: Frank Schaffer Publications, G.W. School Supply, 5626 E. Belmont, Fresno, Ca.
* Imagine That: A set of fifty-some original poems which help children explore their senses, feeling, and the world about them. Source: Human Development Institute, Dept.B, 7574 University Ave., La Mesa, Ca.

Gradually you are becoming aware of and getting in touch with your center of self-energy that is moving up through your body and slowly coming to rest at the point between your eyes. You are feeling very good and relaxed as your center of energy now begins to brighten and form a picture. Just give yourself up to your creative imagination. Your imagination will now begin to create a picture from this center of energy which is focused in your mind.

The scene is of a beautiful sunny day with a slight breeze. You are in a park sitting quietly and looking at a chrysalis of a butterfly that has been attached to a stalk of a green bush. It is just about time for the pupa to begin to open. As you watch you see it begin to happen. Watch the pupa quiver and move. Now it is moving again. The transformation is taking place and slowly the hard cover is splitting, and now the chrysalis is opening and the new butterfly is struggling to emerge.

It is a fascinating scene as slowly, so very slowly, the butterfly pulls itself out of the stalk and moves itself about. Watch how it rests and then very slowly begins to move about in the sun. Gradually it is drying in the sunlight. Much time has gone by, and now the butterfly is stretching its legs and expanding its wings. Now you can see the beautiful colors and patterns in its wings and body as it spreads itself and reflects the sunlight.

It is becoming more active now and is moving out on a leaf. You enjoy watching the beautiful creature as its wings begin to move. The colors on the wings are glowing in the light of the sun. It seems to be waiting for the breeze. There it comes - and the butterfly rises gently, catches the breeze, fluttering and circling higher and higher in the air and moving up toward the warm sun. As it flutters and flys away, you feel its joy of transformation and freedom. You feel light and breezy and very good inside as you watch the butterfly slowly drift away in the rays of the sun.

Now quietly watch the butterfly and imagine what it will do next - how it moves and where it will go. In a minute you will open your eyes and use the crayons on your desk to draw a picture of the butterfly as you imagined it to be. Then share your picture with someone as you explain what you imagined it to be and what it would do next.

Once a "creative imagination time" has been established, children quickly become adept at the techniques involved and require less direction and supervision. In most activities, however, an open and reflective attitude is required which can be initiated through a quiet period of directed mental imagery. This can then be followed with many forms of more active involvement.

Active Learning Tasks.

Several directive instructions have proven fruitful in helping pupils to recall unconscious feelings and images which can then be used for numerous educational purposes. Some of the more simple directive suggestions include asking a pupil to describe in detail:

1. Your most important wishes and aspirations.
2. A vivid dream that you have experienced.
3. Some recurring thoughts or ideas that have appeared to you.
4. The most unusual experience you have ever had.
5. Some feelings or sensations that you have had that seemed to be beyond your control.

6. The visual images or impressions that occur to you during a 3-minute period of quiet reflection and meditation.

7. Sit quietly with your eyes closed and listen to a classical record (such as Bach's Concerto for Two Violins in D minor) for a few minutes. Then open your eyes and use fingerpaint to create a picture reflecting the mood of the music.

8. A time when you said something or acted in some way that surprised you in that it "slipped out" of your unconscious.

Other foms of highly imaginative instructional activities include futuristic thinking, and playing "famous people". Pupils can be helped to imagine such futuristic things as their next birthday party, their next vacation, how garbage and pollution might be disposed of, what a person in the year 10,000 A.D. might look like, and even how world peace might be established. Famous people games require identifying with, acting, dressing, thinking, and talking like such personalities as Abraham Lincoln, John Kennedy, Louis Armstrong, Martin Luther King, Babe Ruth, Vincent Van Gogh, Thomas Edison, or others of special interest.

The following are a few examples of commonly used learning tasks that require children to organize and synthesize facts and information in new and creative ways:

- Select a series of common objects and ask the child to suggest how many different ways they might be used (brick, roasting pan, cardboard box, spoon, can, etc.).

- Present several pictures (park, moon, ocean, etc.) and have the child free-associate what might go with each one.

- Present a problem: If you came to a river and there was no way to get across since there was no bridge, how might you cross the river?

- Have children listen carefully as you read a paragraph of a current news article and then respond to questions (what, where, how, etc.) and speculate about what other endings might be possible under different conditions.

- Present a problem: Suppose your best friend's dog just had the most wonderful puppies in the world. You really want one, but your mother says that you are not old enough to take care of it. How do you think you could convince her?

- Present a problem: Here are some materials to work with (clay, paper, glue, rock, crayons, etc.). Pretend that you are living in the future and you are going to take a trip to Mars. From these things, imagine and create something that you might need on Mars and then show me and tell me how you would use it.
- Present a problem: Pretend you are a Christmas tree that can talk. Describe your feelings and experiences to me.
- Have the child use fingerpaint to make a picture of a dream that he or she can remember and then tell all about it.

Imaginative learning tasks can also be extended or modified to include more traditional forms of academic learning activities. For learning handicapped children, many imaginative listening activities may serve as a prelude to the remediation of specific auditory processing deficits as suggested by Pamela Gillet. Related language experience activities can also be incorporated into a "creative imagination time." For example, Bruno Bettelheim has shown how telling, enacting, and reading fantasy and fairy tales can help stimulate the child's imagination, help develop the intellect, clarify emotions, improve attention, and arouse curiosity for further learning. Teachers have also improved motivation and reading comprehension through the use of creative poetry-writing exercises (with each student contributing a line to a poem on the chalkboard) derived from imaginative personal experiences. In my book on DYSLEXIA, a series of lessons for use with children with severe reading disorders helps to illustrate how focused attention and creative mental imagery can be used to improve basic academic skills.

Every school or educational center has materials which may be adapted for teaching creative imagination. For example, stimulating pictures from old readers, papers, and magazines may be cut-up and rearranged into new tales of fantasy or adventure. Humorous cartoons can be rewritten and presented in unique forms. Art and musical activities can be used to synthesize or expand upon traditional assignments. The teacher with creative propensities will use his or her own imagination to transform the mundane into novel possibilities for growth and learning.

Ch. 6 DISCUSSION QUESTIONS & ACTIVITIES

1. Develop and give a lesson using one of the Dr. Seuss books. Evaluate its effectiveness and how it might be improved.
2. Select three rather unusual books from your school library and suggest how they might be used as imaginative instructional materials.
3. Use ,the Butterfly Exercise in this chapter. Describe some of the most novel associations and pictures produced.
4. Select a current movie or television show and discuss how it might be used as an instructional resource.
5. Write a group poem about "E.T. and Me" by having each pupil compose one line which you place on the chalkboard.

"The physical order is automatic
while the vital order is willed"
- Henri Bergson

Chapter 7. SENSORY IMAGES

Creative imagination develops from human sensations and experiences. Every day we encounter new and varied sensations which may eventually result in some form of creative endeavor.

Our minds and bodies are constantly bombarded by sensory stimuli from the natural environment. The interplay of sounds, colors, textures, and numerous other physical sensations all contribute to our varied mental impressions and images.

However, the physical world around us is seldom observed carefully. And rarely do we willfully attempt to creatively play with our sensory images and experiences.

In this chapter, a variety of sensory images will be experienced from the activities presented. The activities can be used as personal resources or lesson material. All of the activities emphasize the importance of using basic sensory process such as touching, tasting, hearing, etc. in the development of our imagination.

These activities should be experienced prior to proceeding to the more mental or cognitive activities presented in the chapters which follow.

Of course, all of these activities and experiences are merely illustrative and should be modified or supplemented as necessary.

How To Use These Activities.

Teachers should prepare their pupils for these activities. Usually, a careful introduction serves to interest and motivate persons to become involved in what is to follow. Some useful suggestions are presented below:

- Explain that we experience our environment through our sense organs. Ask pupils to list their major senses and to give some examples of strong sensations they have experienced.
- Make every effort to establish an atmosphere of trust and playful adventure before and during the activities. Discuss each activity prior to giving it, ask pupils to define the senses involved, and answer relevant questions.
- Explain that creative imagination stems from the novel combination of sensory impressions. Ask pupils to share some imaginative sensory impressions (such as dreams, "ghosts", strange sounds, etc.).
- Encourage pupils to modify and extend the exercises according to need and interest.
- Avoid the tendency to analyze or evaluate experiences until pupils have completed the activity or have exhausted all associations and expressions.

BODY IMAGES

Lie down in a comfortable position on the floor with your hands relaxed on your stomach.

1. Relax and let yourself go. Now, see if you can concentrate on your slow steady breathing.
2. Now, tense your hands, arms, neck, legs, and your entire body without moving. Increase the body tension for a minute and then "let go"! This time do it again but imagine that you are being tightly squeezed by someone or something-then relax yourself. Describe your image and feelings.
3. Attend to your heart. Imagine that you are your heart. Try to feel and describe your feelings.
4. Keep your eyes closed and become conscious of your weight on the floor and the texture of the clothes on your body. Now imagine that you are growing lighter and lighter. Now imagine that you are becoming heavier and heavier. Describe all of your sensations.
5. Concentrate on your stomach. Imagine that you are your stomach and describe how you are feeling.
6. Keep your eyes closed and focus your attention on a spot in the middle of your forehead. Imagine that you see a television screen with the light beginning to focus on a picture. Let the picture develop. Describe what you experienced.

PLEASANT SOUNDS

Close your eyes and imagine that you hear the pleasant sounds that I suggest to you.

1. Imagine that you are by the ocean and that you hear the sound of the sea with the waves breaking against the rocks. Imagine the sound of the incoming waves and the different sounds of water receding in the sand. Now imagine the sounds of the birds in the air and by the shoreline. Describe it to me.

2. Now imagine a favorite tune. Play it over in your mind. Do not care about the words - just imagine the tune and rhythm captivating your attention and feelings. Feel the sound and tune in your body. Hum the tune to yourself. Describe it to me.

3. Imagine that you are in a place where you hear an unusual but pleasant sound. Listen carefully to it as it is getting louder. Describe it to me.

4. Keep your eyes closed. Imagine that you can hear children laughing and playing. Now you can see what they are doing. Describe what you see and hear.

BREAKFAST

Close your eyes.

1. Imagine your house as it was this morning. Notice your room and what you did before going to breakfast.
2. Now imagine yourself going to the breakfast table. What do you see on the table? Describe everything you see in some detail.
3. Now imagine how it was when you were actually eating your breakfast. Describe the food. How did it taste, feel, and smell?
4. What did you like best about your breakfast? Why?
5. Who was at the breakfast table with you? How are they dressed?
6. Describe anything else that you saw or that happened at bwreakfast.
7. Keep you eyes closed and carefully observe the entire breakfast room after you finished eating. What color is the room? What kinds of furniture and household or kitchen objects do you see?

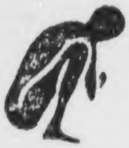
SENSORY IMPRESSIONS

Sit comfortably on the floor or on a pillow with your legs crossed and hands relaxed on your legs.

1. BREATH
   Breathe deeply and slowly. Silently count 20 deep breaths. With each count try to breathe deeper and slower. Describe the sensations involved.
2. MUSIC
   Close your eyes, breathe deeply, and listen quietly to some rhythmic classical music (such as a Vivaldi concerto) for three minutes. Then open your eyes and use crayons or felt pens to draw colored images and symbols as you continue to listen to the music.
3. STONES
   Place several unusual and pretty stones in front of you. Sit quietly and study them closely. Now take one in your hands and feel it. Describe its size, color, and texture. Now close your eyes and imagine that you are part of the stone; describe what your impressions are in some detail.

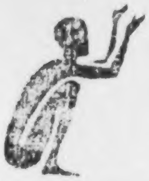
EXPRESSIVE MOVEMENT

Imagine that you are a tree sprouting, growing, gaining strength, moving, and swaying in the breeze.



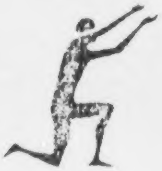
1.

Begin in a crouched
but relaxed position,
imagining yourself
as a seed.



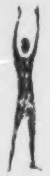
2.

Remain crouched
but raise your head
and arms
and "begin to sprout."



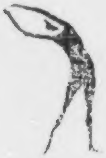
3.

Extend your arms,
then slowly stand erect
as you "grow"
toward the sun



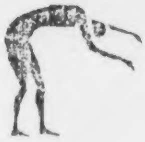
4.

Stand erect
and feel your strength
and roots
in the earth.



5.

Slowly sway rhythmically
to a pleasant breeze



6.

Bend and sway
but rely on your balance
in an imagined storm

7.

Imagine other possible
rhythmic "tree" movements
and try to experience them
slowly and gracefully
Become aware
of each body part
as you move it.

ICE CREAM

1. Close your eyes , breathe deeply and relax to the Baroque music.

2. Imagine that you are walking down a shopping mall and you see an ice-cream store ahead.

3. You enter the store and notice the many kinds of ice cream to choose from. You decide to order a special five dip cone.

4. Imagine the man taking a giant cone and first placing a big dip of chocolate on the cone.

5. Now he places a dip of vanilla on the chocolate.

6. Then he places a dip of peach on the vanilla .

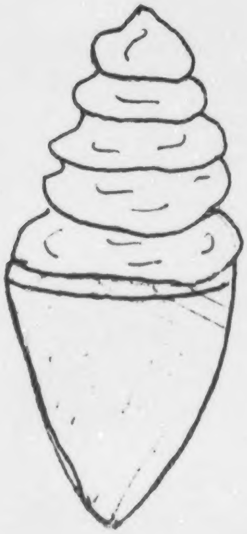
7. Now imagine that he puts a dip of strawberry on the peach.

8. The last dip on the cone is butter brickle.

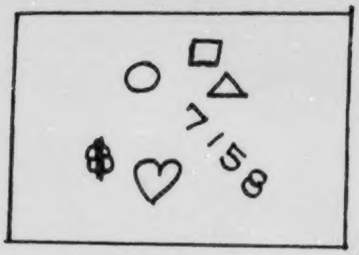
9. Imagine that you have the cone and you are licking it from the tope down. Taste the butter brickle, the strawberry, the peach, the vanilla, and the chocolate.

10. Imagine that you are licking them again.

11. Now open your eyes. Color in the ice cream cone below and describe how you imagined it to look and taste



SYMBOLS



Close your eyes and imagine what I tell you.

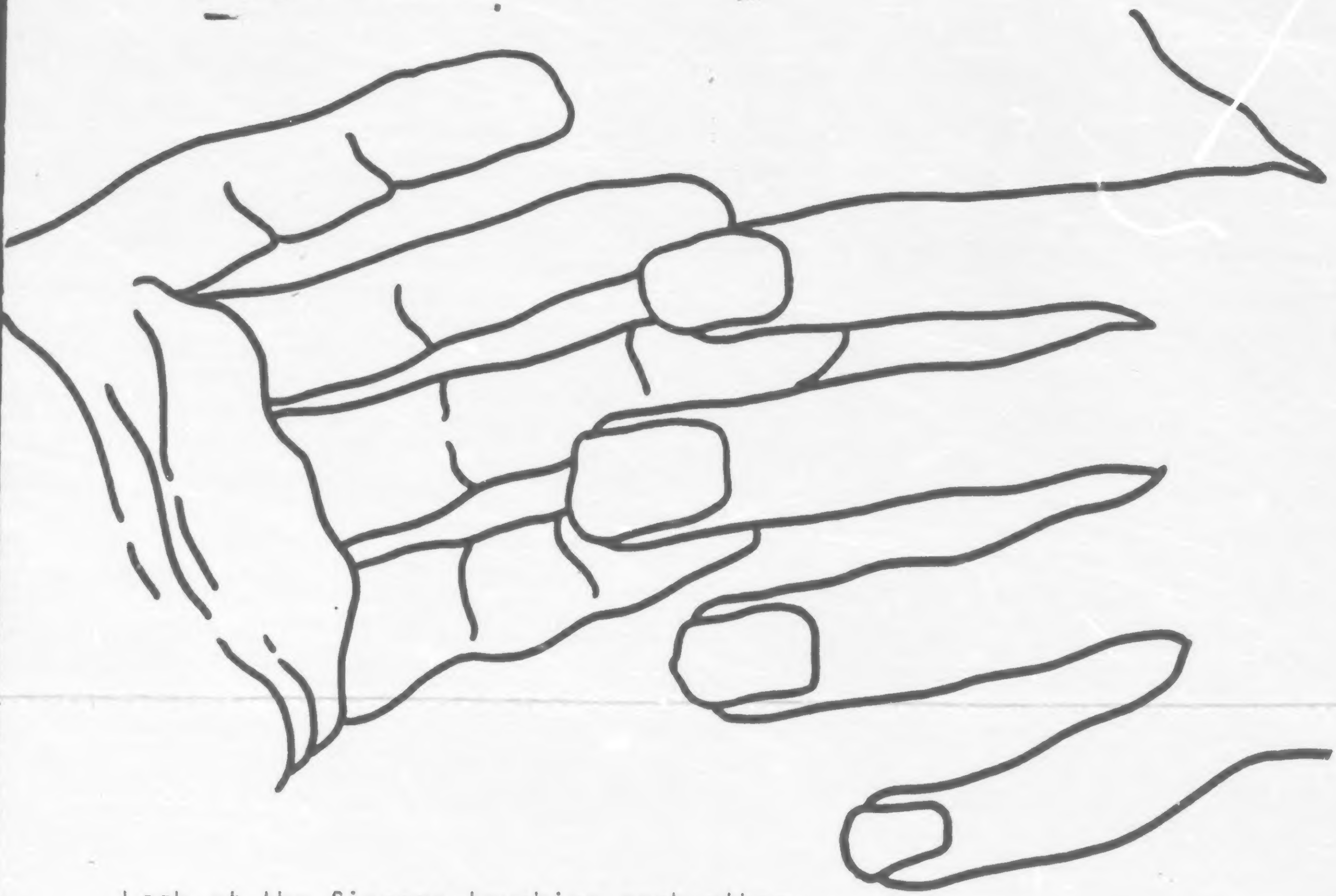
1. Imagine several coins on a table. How many are there? What kinds of coins are they? What is the sum of the coins? Open your eyes and draw the coins on the chalkboard.

2. Imagine that you see a colored circle, square, and triangle on the chalkboard. What colors are they? In what order do they come? Are they all the same size? Open you eyes and color them as you saw them with your eyes closed.

3. Imagine that you see your house number and address. Carefully notice the numbers and tell me what they are. Now look at the numbers backwards - what number comes last, etc. Open your eyes and write your house number and then check to see if you could recall it backwards.

4. Imagine that you see a large Valentine day heart colored blue. Now imagine that you see a small heart colored red. Imagine that you see a different sized and different colored heart - describe it to me. Open your eyes and create colored pictures of the hearts you have described.

TOUCHING



Look at the fingers touching each other.

1. Close your eyes. Reach out with your hand. Imagine that you are gently touching the extended fingers of a friend. Attend closely to the sensations in your fingertips. Describe the feelings and sensations involved.

2. Keep your eyes closed. Now imagine that you are holding and stoking a pet dog or cat. Feel the fur and the body of the animal. Describe the animal, how it feels to you, what it looks like, and its response.

FLOWER

Close your eyes and imagine that you are in a beautiful garden.

1. As you walk around you notice a bench by some mysterious looking flowers which are just about to bloom.

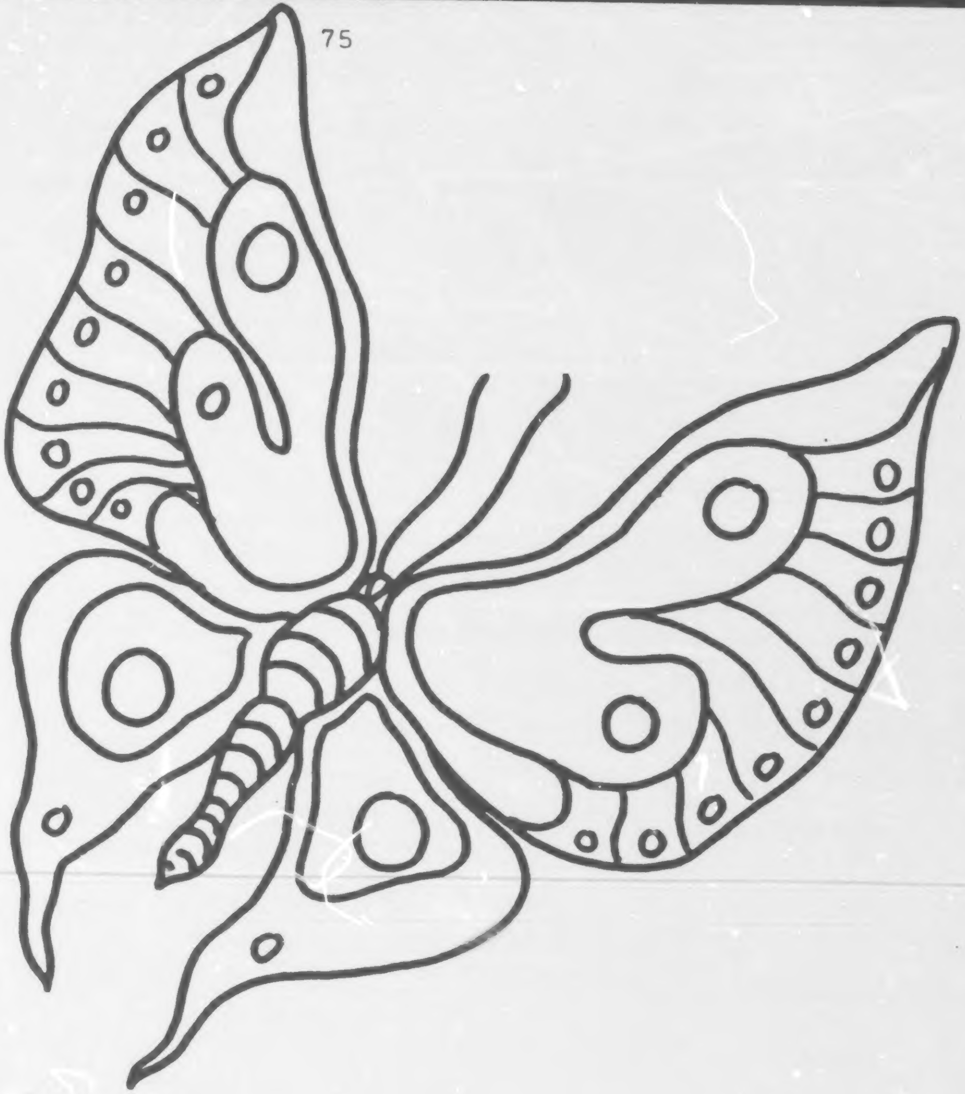
2. You sit down and find that you are strongly attracted to a particularly beautiful blossom.

3. You find that you amazed by the beauty of this flower. You observe it very carefully and note its texture and colors. Now you can smell its fragrant oder.

4. As you watch the flower you can see a bee inside the new blossom. Imagine that you are the bee and that you are seeing the flower from a new perspective.

5. Keep your eyes closed and describe your sensory impressions in detail.

BUTTERFLY



Look at
the butterfly.

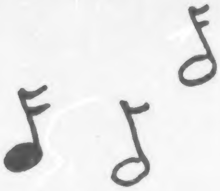
1. Now close your eyes and image the butterfly in a natural scene.

2. Your butterfly has beautiful colors. Observe them closely.

3. Be sure to notice the dominant colors on the wings.

4. Keep your eyes closed and describe your butterfly, its colors, and the natural scene that you have imagined.

5. Open your eyes. Use crayons to show the colors of your butterfly. Describe your feelings and impressions of the butterfly and the natural scene.



FUNNY SONG IMAGES

1. Close your eyes and listen carefully to each line of this funny song as I sing it. Try to picture the words in your mind. Then repeat each line after me:

> "A horse and a flea and three blind mice,
> sat on a curb-store shootin' dice -
> the horse slipped off and fell on the flea
> and the flea said "Whoops! It's a horse on me!"

2. Keep your eyes closed as we sing it again. Imagine as clearly as you can what is happening in the song. Describe to me in some detail what the animals look like.

3. What is the funniest image that you see when you sing this song with your eyes closed?

4. Sing me another fantasy song and describe the images which occur to you.

5. Select a popular record or tape which suggests unusual images or associations. Listen carefully to the song and copy the major lyrics or words which are most easy for you to picture in your mind.

6. Listen to another "fun song" and draw a picture of what it suggests to you as the music is playing.

DREAMS

Place a pencil and sheet of paper by your bed before you fall asleep. The next time you dream, try to draw a picture of part of your dream as soon as you awake. Then complete the following activities.

1. Look at your picture and write down all the words or sentences that come to you about your dream.
2. Describe how the dream made you feel and any unusual sensations you experienced.
3. Describe the plot or story (if any) presented in your dream.
4. Use a large sheet of paper and color or paint the most vivid image or symbolic part of your dream.
5. Show your picture or painting to others and tell them about your dream.
6. Discuss the possible sources of sensory, experiential, or imaginative information and stimulation which may have appeared in your dream.

Follow-up Suggestions.

- After each activity ask pupils to evaluate their own sensory experience and to suggest some modifications or extensions.
- Have pupils share similar sensory experiences (such as body sensations while sick or in the hospital, etc.). Encourage pupils to suggest other relevant activities and to lead the group in exploring them.
- Play sensory impression games during which pupils first describe a sensation ("feels soft and fuzzy and purrs", etc.) followed by naming the senses involved and the objects of concern.
- Take a field trip to a park or garden. Have pupils focus their attention on some natural thing according to their individual interest (tree, insect, leaf, rock, etc.), sense it in as many different ways as they can, and then share the experience.
- Develop a "sensory center" in the classroom where unusual objects (textures, plants, pictures, etc.) may be placed and experienced.

Ch. 7 DISCUSSION QUESTIONS & ACTIVITIES

1. What is your most underdeveloped sensory ability? How might this be enhanced?
2. Obtain a beginners book on yoga exercises. Try several of them and share the new sensations you experienced.
3. Design several different kinds of sensory exercises using water and ice.
4. Suggest several other kinds of touching ("physical contact comfort") exercises which could be used with young children.
5. Try to describe some of the sensations and feelings from the most vivid dream you can remember.

"All our joys are but fantastical"
- John Donne

Chapter 8. DIRECTED FANTASY

With accumulated experience and education our minds begin to wonder and creatively explore new possibilities. Fantasy is unrestrained ingenious imagination which fulfills the human need to transform or escape from the confines of everyday reality.

Our individual and collective fantasies are usually joyful ones. Whether it be through cinema, cartoons, science fiction, romantic stories or countless other forms, fantasy aleviates our current stress and renews us with the exciting interplay of novel images and ideas.

With creative refinement and adaptation many of our fantasies such as space travel, telecommunications, automation, etc. have become functional reality.

In this chapter a number of directed fantasy activities are presented. Several of these are "What If" activities which evoke speculation from a stimulating picture. Others present written directional guidelines along with pictures which require more directed thought and association.

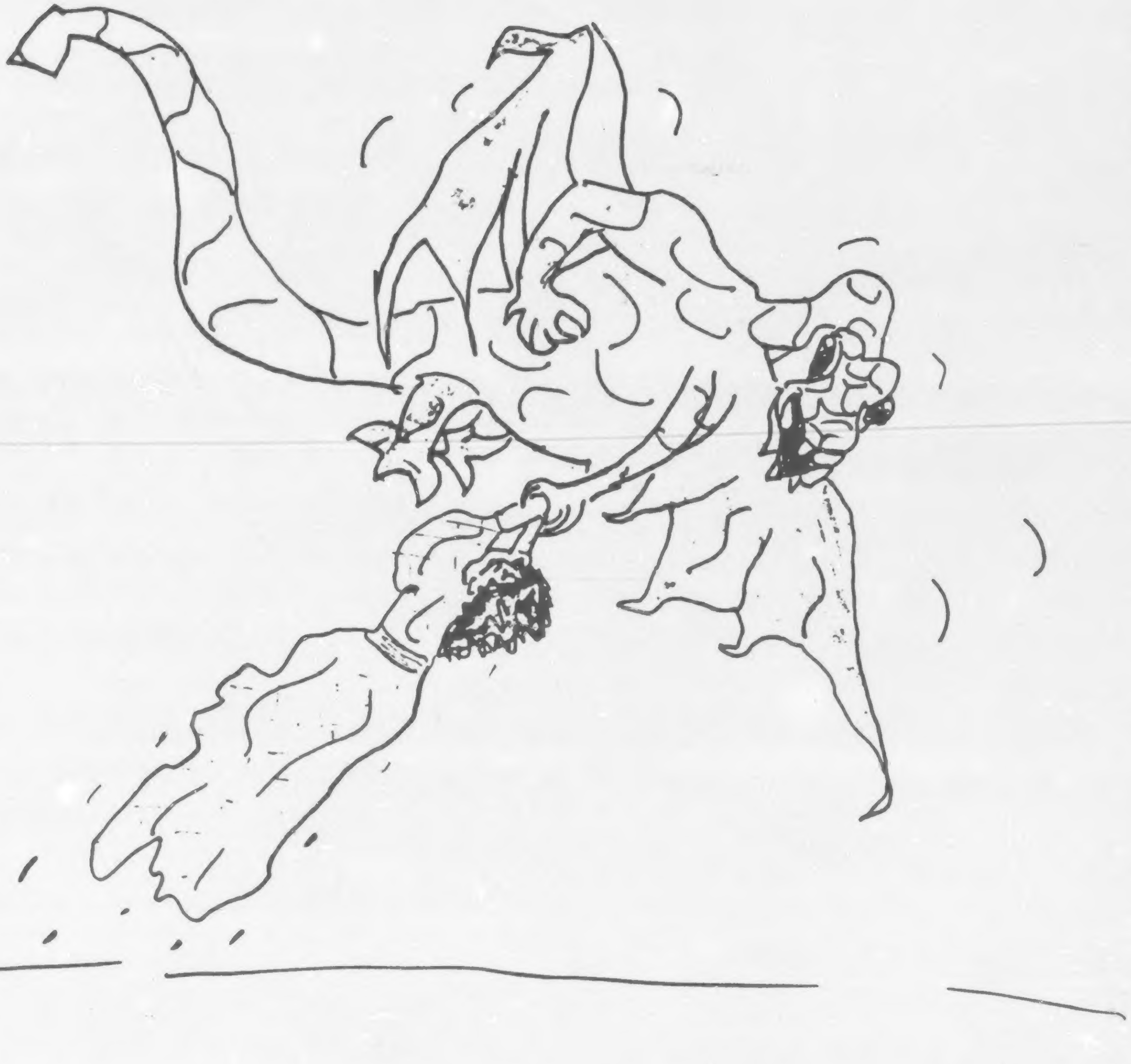
Many pupils also enjoy creating their own stimulus pictures from magazines, cartoons, and old textbooks. Pupil responses can be tape recorded, developed into language experience stories, and supplemented in many other ways. What is important here is that fantasy be encouraged and explored as a positive step in the development of creative imagination.

How To Use These Activities.

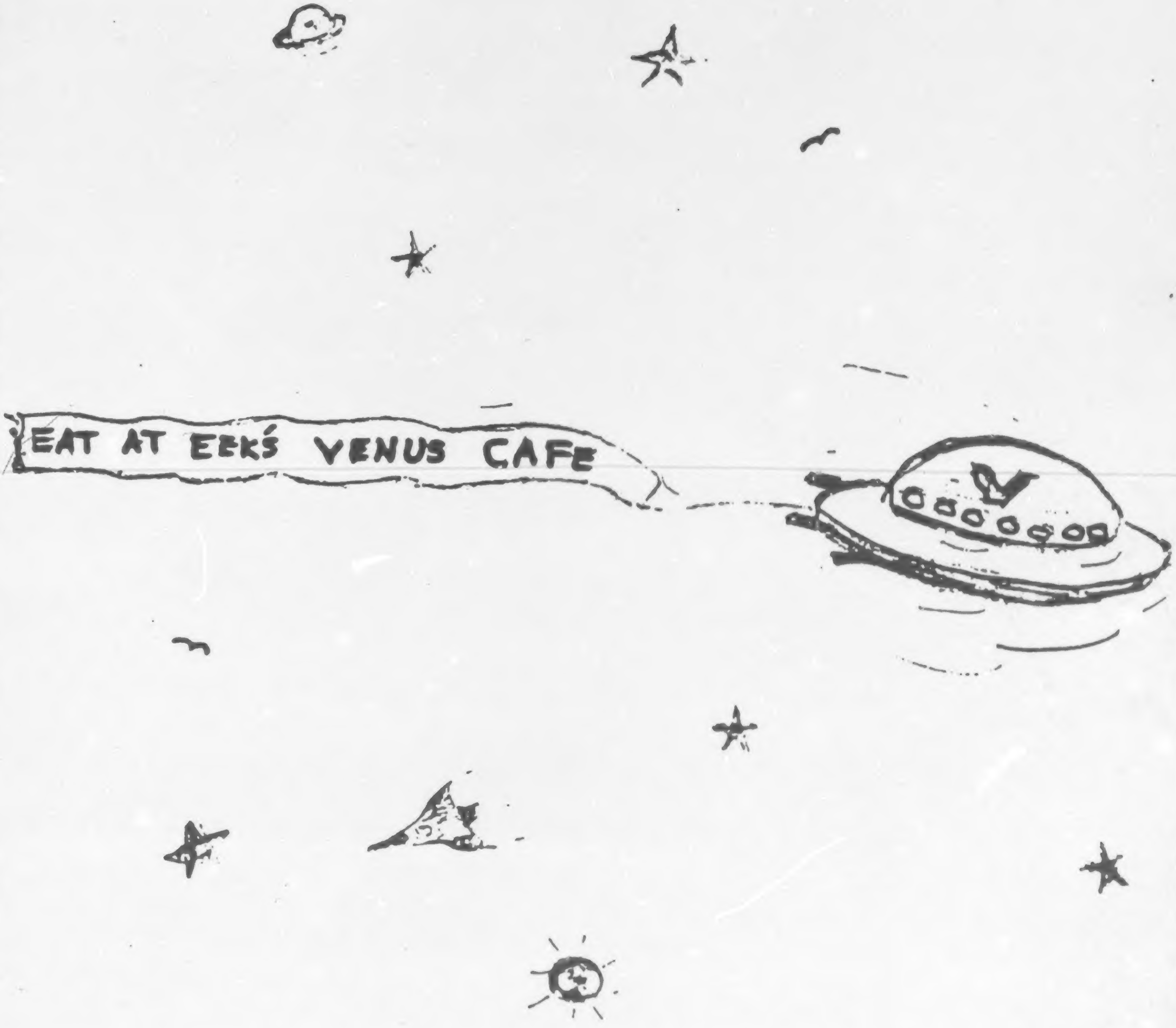
Introduce these activities with a brief discussion on the general importance of fantasy in human life - such as portrayed in novels and artistic works. The following suggestions may be especially helpful:

1. Clearly establish that everyone has fantasies which vary from person to person. Reassure pupils that fantasy is one form of enjoyable normal human behavior.
2. List on the chalkboard as many different kinds of fantasies that the class can suggest. Discuss any concerns that pupils may have about them.
3. Encourage pupils to associate to each others fantasies, to "hitch-hike" on interesting ideas, and to modify and play with some of the images presented.
4. Do not ridicule or critize any form of expressive fantasy. Help the person to work-out the fantasy through further discussion, dramatic enactment, etc.
5. Remember that fantasies may result in ingenious ideas, designs, or inventions. Occasionally play inventive fantasy games including drawing, building, and construction of things (including those that do not seem to have any practical application).

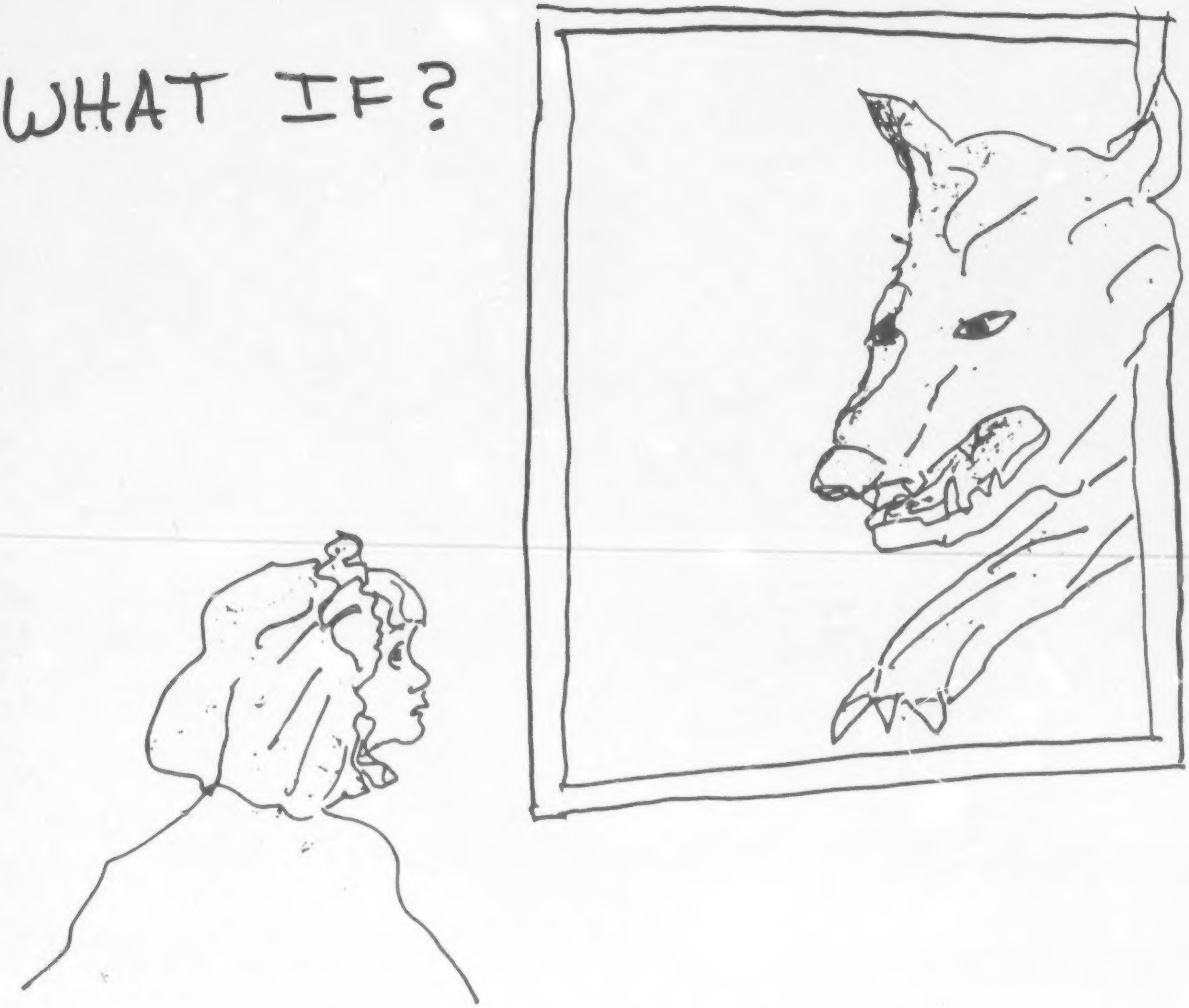
WHAT IF ?

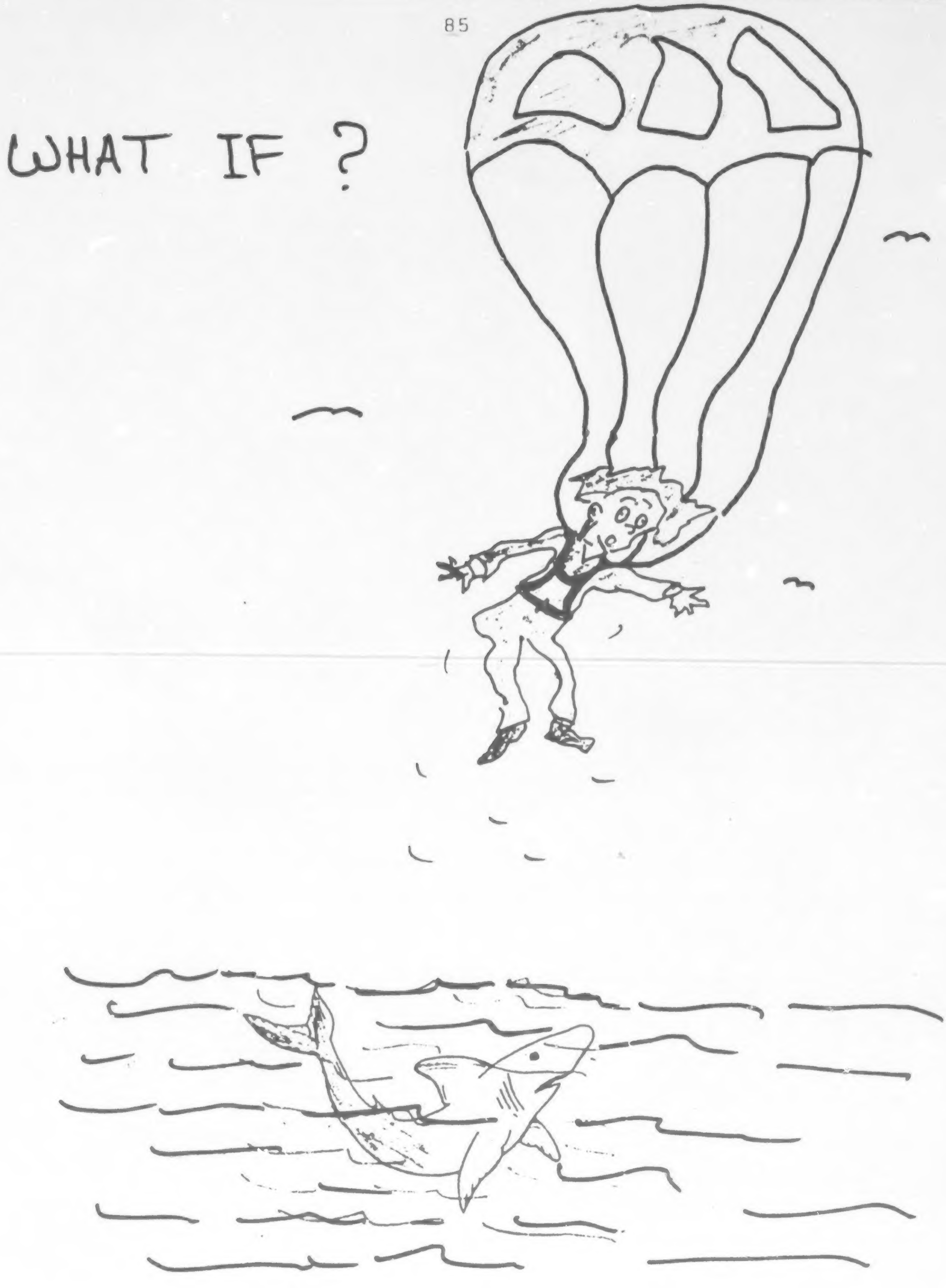


WHAT IF?

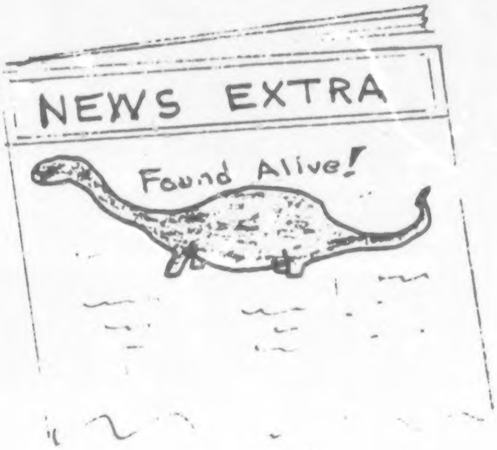

EAT AT EEK'S VENUS CAFE

WHAT IF?

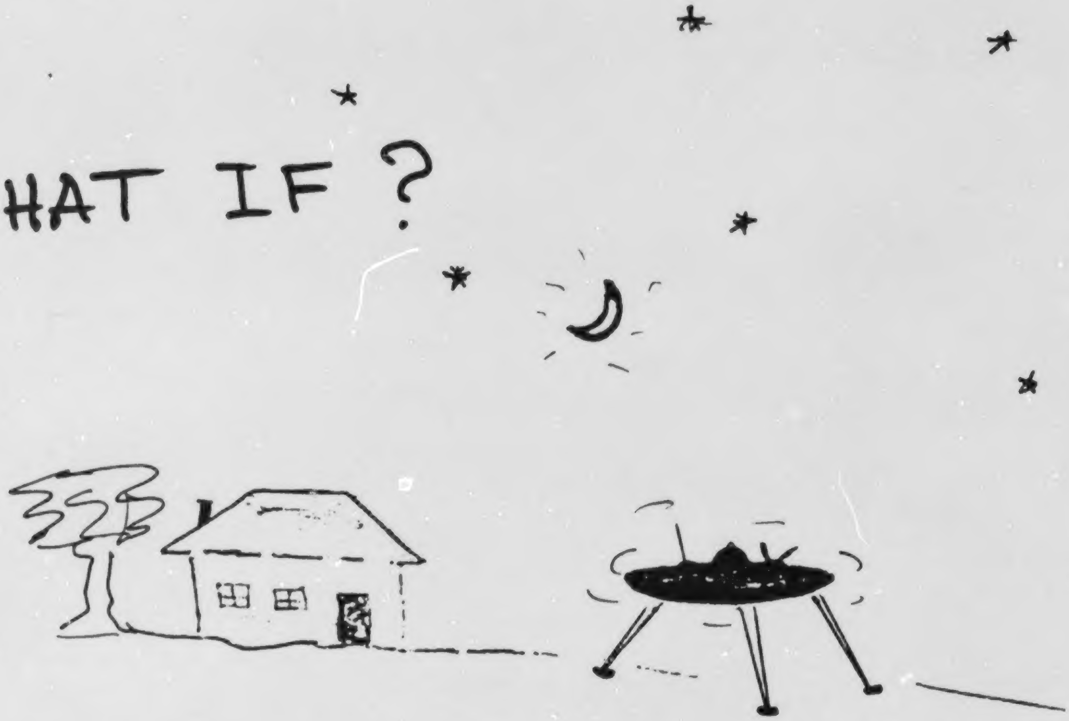


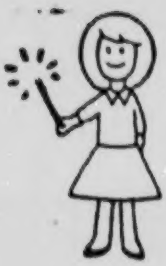

WHAT IF ?

WHAT IF?

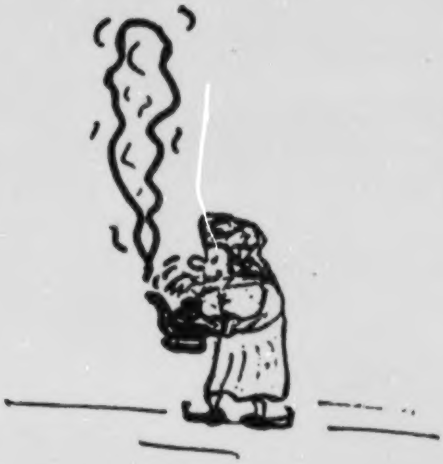

NEWS EXTRA
Found Alive!

WHAT IF ?





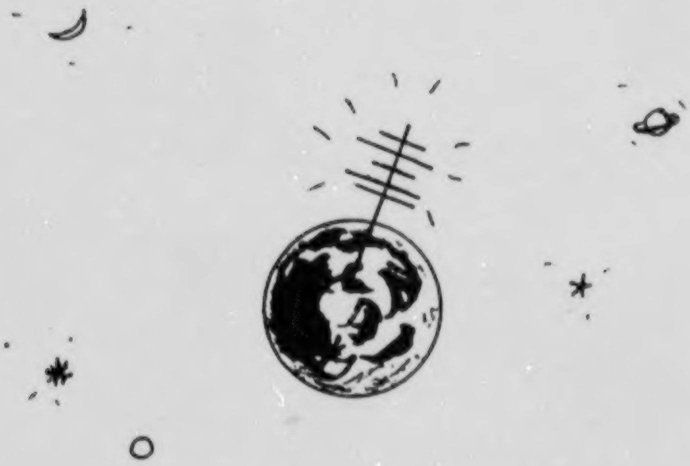
This girl has found a magic wand. What can you imagine she will do with it?



Make up a story about this picture

Imagine that you were a zookeeper and had to weigh a sick elephant. How would you do it?

Pretend you were a Christmas tree the day after Christmas. If you could talk what might you say?



Imagine that you could communicate with life on other planets by means of radio or television. What questions would you ask them?

Follow-up Suggestions.

- Have pupils selcted and color one of the pictures in this chapter. Ask them to change the picture in some way and tell a story about it. Tape record and play back the story.
- Initiate a group writing project on a science fiction theme.
- Have pupils imagine that they were part of a newspaper reporter team doing an investigative story on outer space communications (or a new discovery, etc.). Have the team plan how they would cover the story, where they would go, who they would talk to, questions they would ask, pictures they would take, etc.
- Assign pupils the task of finding a fantastic picture (or art work, etc.) and present it to the class with their associations and feelings about it.
- Share local (or personal) stories and pictures about "haunted houses" and ghosts.

Ch. 8 DISCUSSION QUESTIONS & ACTIVITIES

1. Why are people attracted to monsters such as Frankenstein's monster, Beauty and the Beast, etc.?
2. How might a sick elephant look and act? What other kinds of sick animals might be difficult to weigh? Why? Imagine several different ways that these animals might be weighed.
3. Why do people enjoy the Fantasy Island television show and the "soap operas"?
4. What makes a "haunted house" scary? What is the most scary thing that you can imagine?
5. When do you tend to fantasize most?

"As long as the mind can envision
the fact that you can do something
you can do it!"
- Arnold Schwarzenegger

Chapter 9. IMAGINATIVE SITUATIONS

Athletes, artists, writers, and scientists have long recognized the importance of developing imaginative situations which can be mentally explored and experimented with.

Many imaginary situations are playful and non-threatening and may lead to increased physical control and productivity. Situational images are usually simple pictorial ones - such as seeing oneself fishing, skiing, or doing other pleasant tasks.

But it is also possible to imagine more symbolic situations such as constructing something or dealing with complex words or objects in novel ways. Almost any academic task or physical skill can be creatively imagined and refined prior to actual performance.

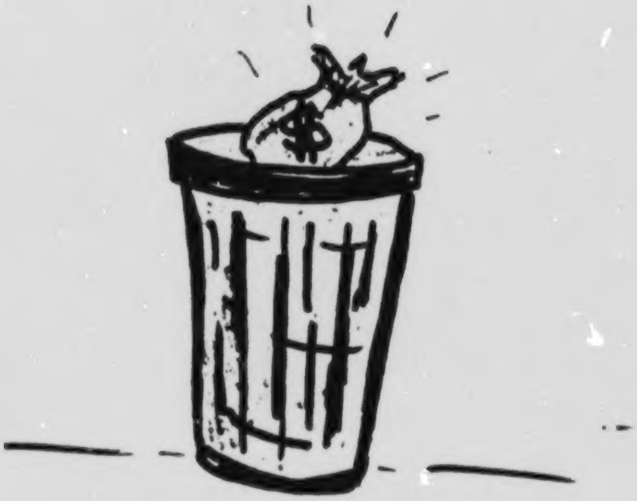
The following activities are suggestive of a variety of imaginative situations which may be of some functional value. Pupils should be encouraged to use them as models for other situational activities which are relevant to their personal interests or inclinations.

In all such activities, it is important to imagine the situation in as much detail as possible and to explore it verbally and pictorially. Physical enactment through dramatic arts, drawings, construction, or by other means should also be provided whenever possible.

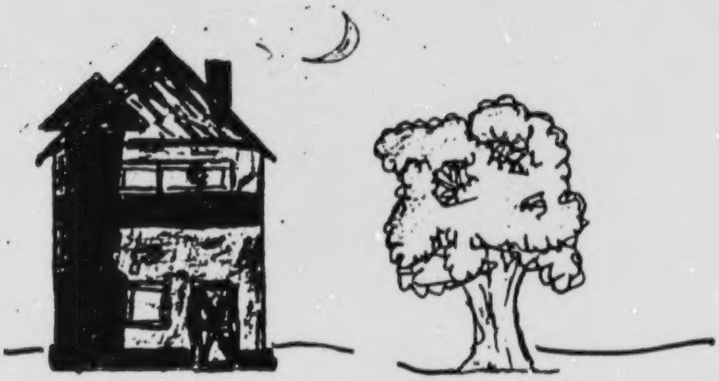
How To Use These Activities.

Begin by explaining that everyone uses their imaginations when they wish or plan for something to happen. By picturing ourselves in different situations we are able to consider different ways of acting and thinking. The imaginative situations presented in this chapter can be used as follows:

- Since a common wish or desireable situation is to find money, start with the "money in the garbage can" activity. After sharing what might be done with the money ask pupils what they would not do with the $10,000 (or what they feel would be a "waste" of the money). Then list and discuss imaginative and fortunate money making situations (contests, lucky gambling,etc.).
- Discuss how some wishes and desires actually became realized through follow-up planning and effort. List several wishes and discuss which ones might be the most feasible and why. Recall past wishes and daydreams that proved highly unrealistic and disappointing.
- Share some "scary" imaginative situations. Explain how "pictures in our minds" and anticipations actually create favorable or unfavorable situations (such as fear of trying something new or different, etc.).
- Exchange partial ides. For instance, on the "helpful advice cartoon" have one pupil write in the doctor's words and another pupil complete the patient's words.
- Encourage pupils to project themselves into a variety of situations and to anticipate how they might behave.

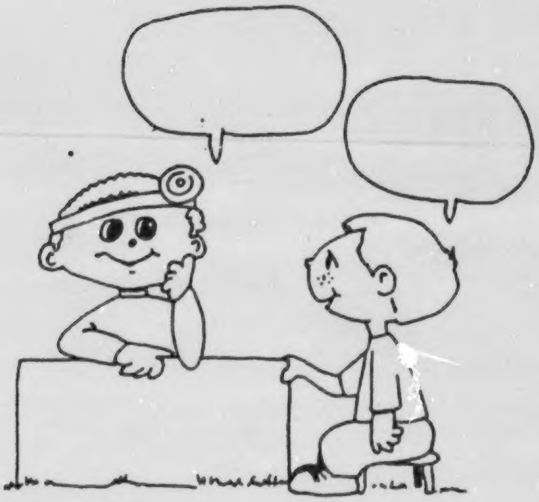


Imagine what you would do if you opened your garbage can and found a bag with $10,000. in it.



Imagine what might happen if you had to spend a night in a haunted house.

HELPFUL ADVICE?



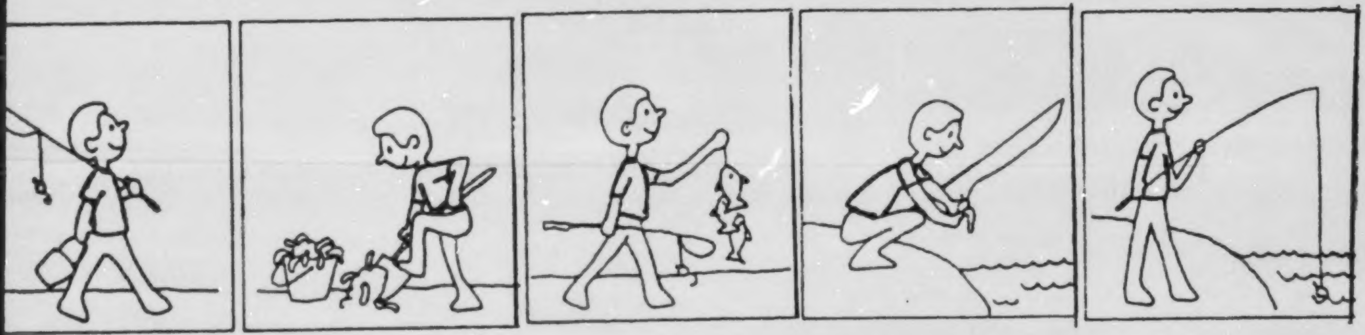
Objective: To use humor in expressing and understanding feelings

Procedure: Study the cartoon above and think of some humorous advice that the doctor might be giving his patient.

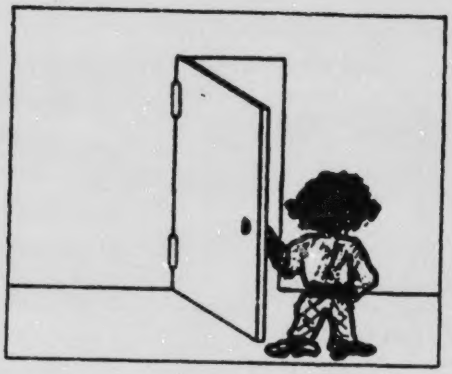
Activities

1. Write in the doctor's words.
2. Write in the patient's words.

FISHING

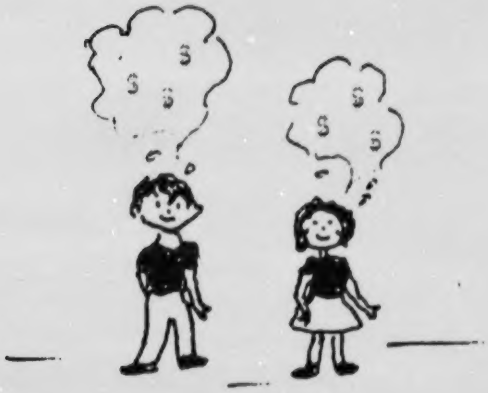


Make up a silly story about this cartoon.
Now tell me another way it might end.



This boy is peeking into a strange room.
What do you think he sees?

ALLOWANCE



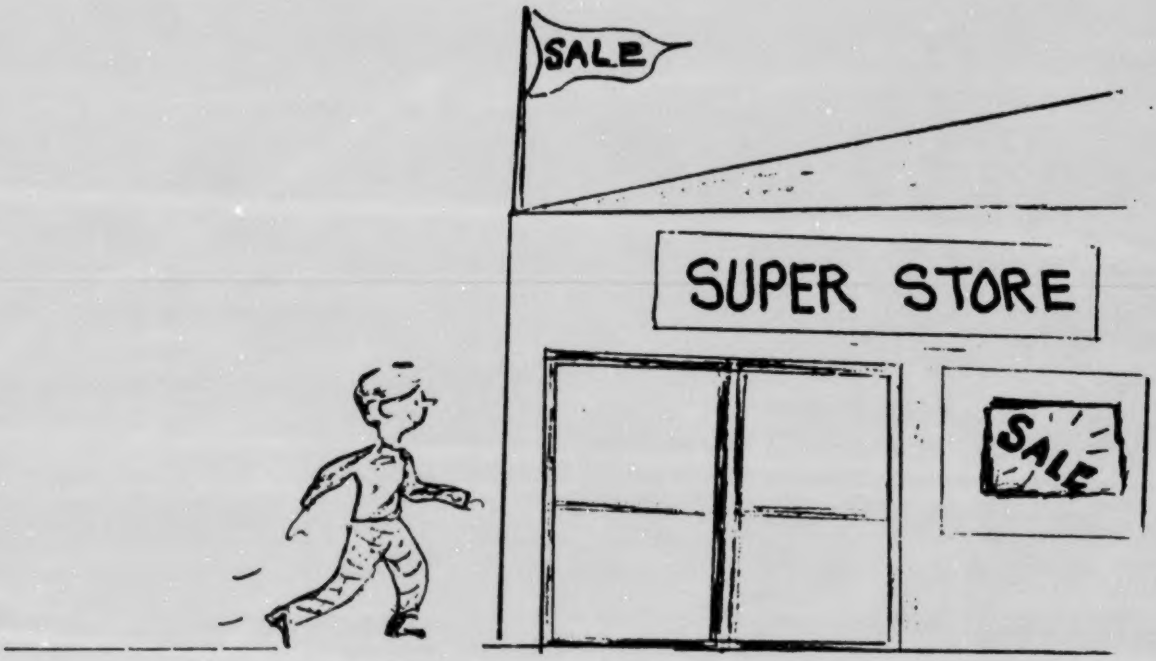
Pretend that you could set your own allowance. How much would it be? How often would you be given it? How would you use it?

PLAYBACK

As Steve watched the playback film of the last basketball game, he couldn't believe his eyes. Was it actually him making all of those mistakes? After all, he was the first-string forward with an outstanding record. And, although his team had lost the game by only 3 points, he tried hard to win.

The last quarter was unbelievable. As he saw himself make foul after foul, he recalled the coach's words to "get hold of" himself. And then he saw himself denying his fifth foul and swearing that the officials had made a mistake. But there he was on the film, holding his man tightly with his own two arms. Why couldn't he even remember that he had actually done it?

Why do you think Steve could not remember committing his fifth foul? What might Steve learn from watching the playback film?

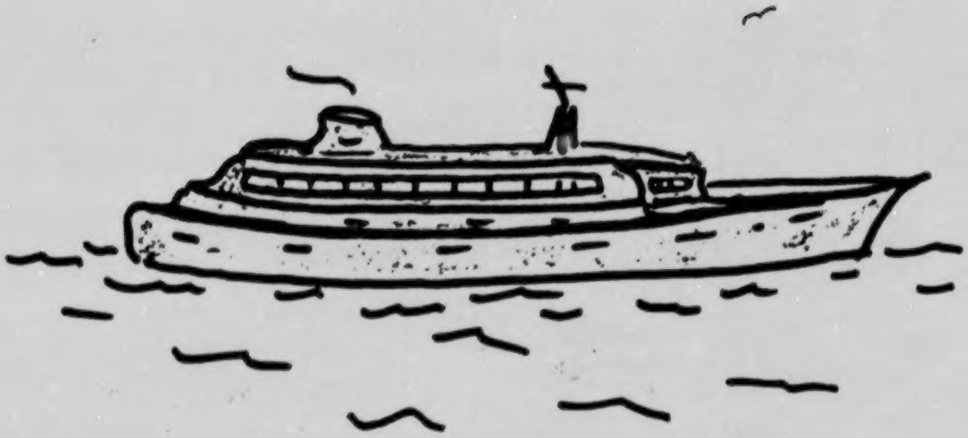

SALE
SUPER STORE
SALE

Pretend you had all the money you wanted and you went to a Super Store sale where you could buy anything. What would you buy? Why?

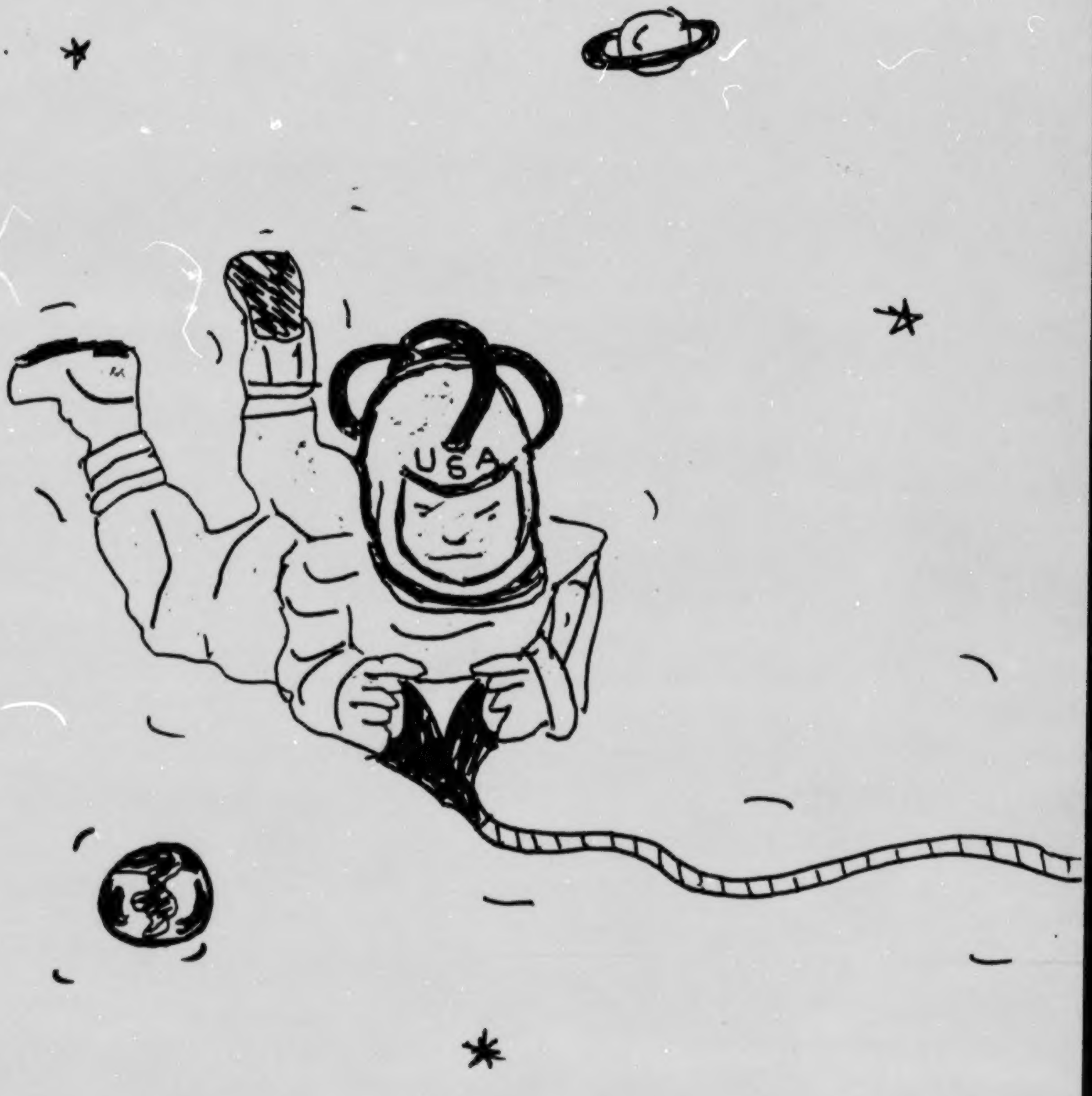
BASKETBALL

Close your eyes and relax. Imagine that you want to play basketball and that you are walking onto a court where you are going to practice. You recognize the court - describe it to me.

1. Imagine you are walking up and down the court bouncing the ball with a **steady** rhythm. Keep your eyes closed, extend your hand and imagine bouncing the ball.
2. Now you are walking to the free throw line. Imagine centering yourself before the basket, holding the ball in both hands, focusing on the backboard target. You take a breath, bend your knees and shoot. Imagine the ball going through the air, striking the board, and falling back through the basket.
3. Now imagine walking over and picking up the ball and returning to the free throw line. Again you relax, center yourself, focus and get ready to shoot. Show me how you are holding the ball. Now imagine you shoot and make the basket.
4. Keep practicing in your mind by shooting five more baskets. With each shot you are becoming more accurate and feeling more confident. Did you make all of the baskets? Describe your shots to me.
5. Now imagine that you are planning to run up to the basket and shoot. Look and see where you are going to go and what you plan to do. Now you are moving and shooting the basket. Describe to me what you imagined and how you might have improved your shooting.



Imagine you were taking a long vacation on this cruise ship. Where would you go and what do you think might happen?



Imagine what this picture is about and what is going to happen.

Follow-up Suggestions.

- Have pupils imagine an environmental situation that might eventually change their own behavior or way of living (such as pollution, disaster, etc.). Then brainstorm some imaginative ways of coping with the situation.
- Repeat some of the word association activities using different kinds of musical background. Discuss how different kinds of music helps produce varied mental images.
- Have pupils imagine themselves in a school talent show or skit. What might they do?
- Image some new ways of communicating with persons that might exist by the year 5000 (forms of extrasensory perception? 3-D video telephones? etc.).
- Involve pupils in exploring some new sport or different physical activity through mental imagery. What kind of athlete or "hero" might they wish to become? Have them visualize and practice-in-their-minds some of the movements or skills that might be involved (such as shooting baskets, skiing down hill, lifting special weights, etc.).

Ch. 9 DISCUSSION QUESTIONS & ACTIVITIES

1. Why do mystery and detective stories appeal to so many people?
2. What kinds of magic tricks would you like to be able to perform if you were a great magician?
3. How do newspaper and television reporters attempt to capture the attention of their readers and viewers?
4. What might be some of the problems involved in attempting to improve athletic performance through the use of mental imagery?
5. What kind of adventurous situation is most appealing to your imagination?

"Thoughts are free and are subject
to no rule ... and give birth to
creative force"
- Paracelsus

Chapter 10. CREATIVE THINKING

Our everyday world presents us with numerous practical problems requiring careful thought and action. Most of these problems can be approached and solved in several different ways.

However, many persons have been conditioned to think in narrowly restrictive modes. And some individuals even believe that there is only one "right" way to deal with issues and concerns.

Children need to be taught to reflect on alternative approaches to problem solving. Free thought does give birth to the creative forces within us. But these forces must be nurtured in an open and permissive environment which actually encourages divergent thinking and exploration.

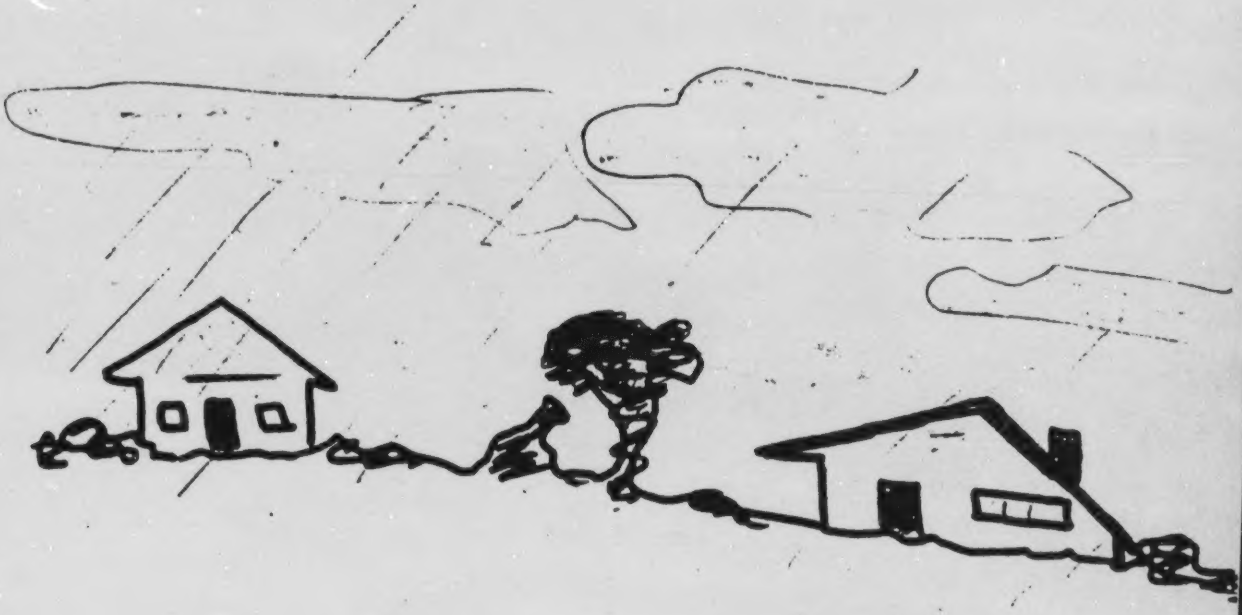
In this chapter a variety of realistic problems are presented for thought and consideration. The first few are relatively simple. Those that follow require more thought and are presented with supplemental writing and discussion activities. All of these problems are merely illustrative of the many different kinds of material now being used to foster creative problem solving.

How To Use These Activities.

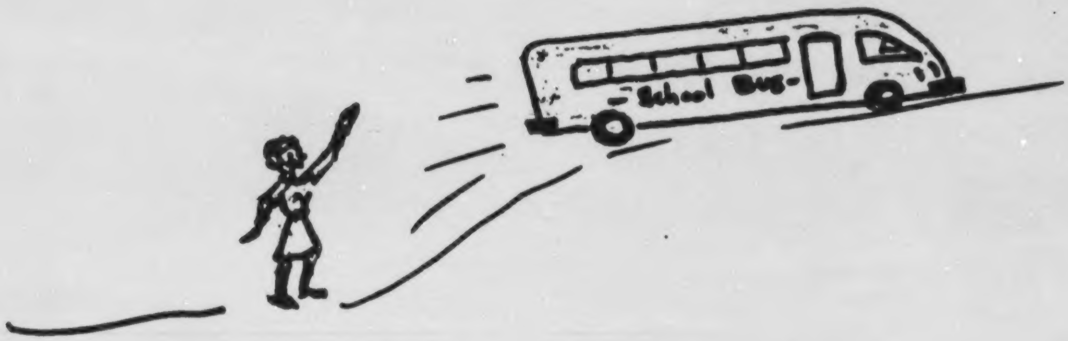
Begin by explaining to pupils that most problems can be solved in several different ways and that the first proposed solution may not be the best or most appropriate one.. Then discuss the following points:

- All persons are capable of alternative-divergent thinking and creative problem solving. The first step is to believe in one's own potentialities and to open one's self to new ideas and suggestions.
- It is essential to take the time necessary to play with problems in order for novel thoughts and associations to begin to emerge. Emphasize that the first possible solution is usually followed by others with time and reflection.
- Many alternative ideas emerge when the person takes a different perspective on the problem. For instance, have pupils experiment with restating the problem, turn-it around, working backwards with available information, or imagining themselves as one of the persons or objects involved and trying to see things from that point of view.
- Suggest that most people actually create many of their own personal or social problems. These kinds of problems can also be solved through imaginative thinking such as mental role-playing of alternative ways of behaving.
- There are many books, programs, and courses available on creative problem solving. Some of these are available through library and other educational resources which pupils may wish to investigate and report on. ...

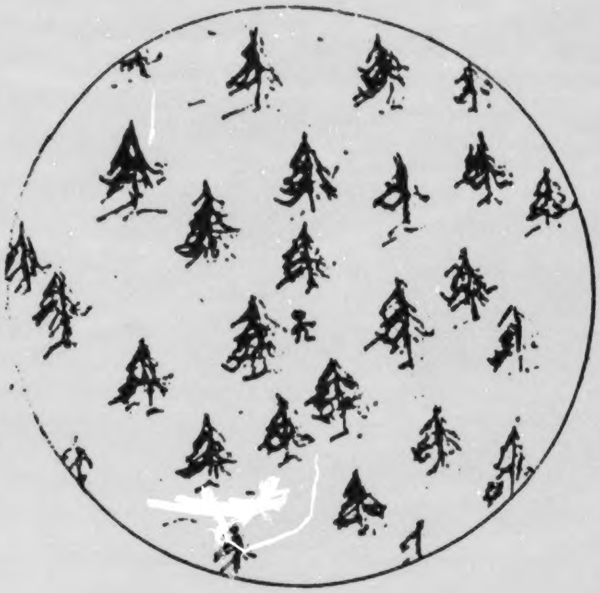
Pretend your friend had some beautiful playful kittens and you wanted one but your mother says you are not old enough to care for it. How do you think you might convince her to let you have one?



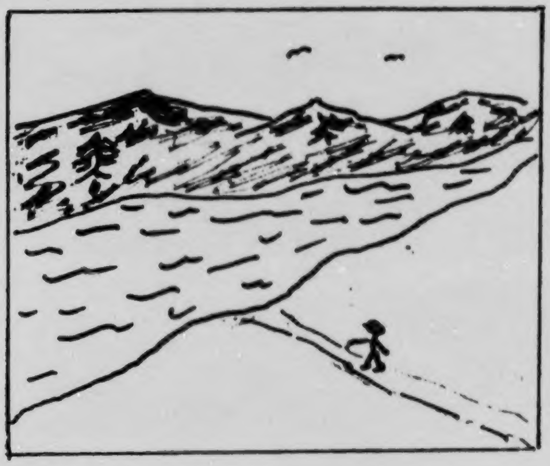
Imagine that it was raining hard outside and that you wanted to get to your friends house but that you did not have an umbrella. How might you get there without getting wet?



Mary has just missed her school bus.
Her parents have already gone to work.
What should she do?



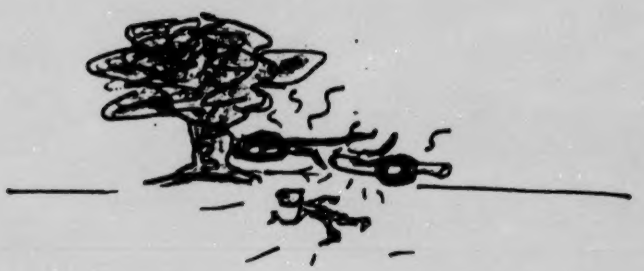
Imagine that you got lost in a big forest. How would you go about getting out?



This man was on a long hike and came to a wide river without a bridge. Imagine several ways that he might get across.

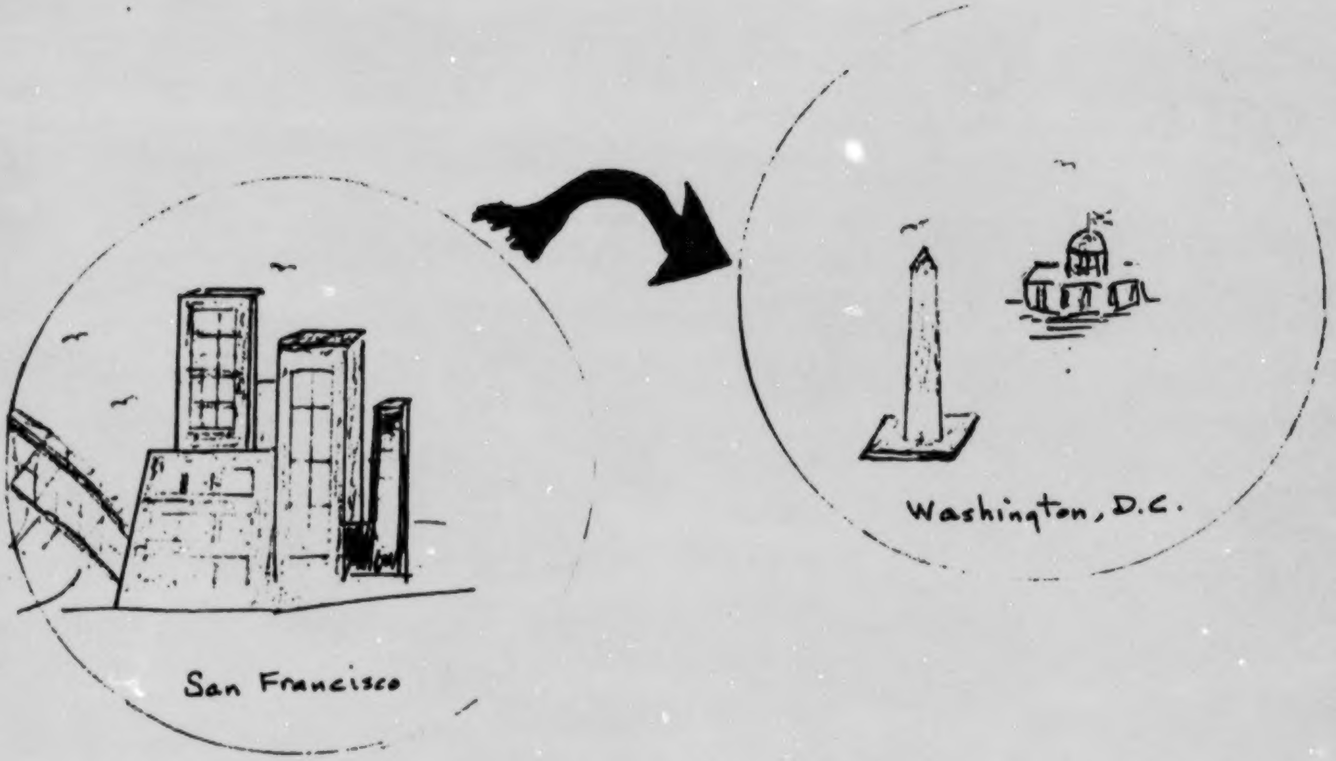
What are some ways that we might reduce the number of people killed by handguns each year?

Imagine you were stranded on an island with two other persons. Who would you choose? Why?



Imagine that a young man had a
motorcycle accident late at night
on a lonely road in the country.
What do you think he might do?

Imagine that you were going to visit mars.What would you take with you? Why?


San Francisco
Washington, D.C.

Imagine how many different ways
you could send a message from
San Francisco to Washington, D.C.

Follow-up Suggestions.

Most of the activities presented in this chapter can be followed up by pupils designing similar problems for further consideration. Some of these might include the following:

- Collecting and sharing varied solutions to innovative games and puzzles (such as Rubic's cube, etc.).
- Try some imaginative approaches to problems presented in creative problem-solving courses such as Edward DeBono's Five Day Course in Thinking.
- List several recent inventions and discuss the situation that prompted their consideration. In what way might these inventions be extensions, improvements, or transformations of existing products.
- Have pupils list a personal problem (health, family, etc.) and attempt to draw pictures of different ways of dealing with it.
- Involve the class in developing a list of major national problems (unemployment, crime, peace, etc.). Poll them to establish current priority problems. Brainstorm divergent and imaginative approaches to the problems. Develop a class project and special bulletin board for posting ways and suggestions for coping with the problem of most concern to the group.

Ch.10 DISCUSSION QUESTIONS & ACTIVITIES

1. What are some of the things that might prevent people from using creative or imaginative problem solving methods or techniques?
2. Think of the most creative or innovative person that you know. What makes him or her distinctive?
3. Discuss something that you have created or a problem situation that you solved imaginatively. Explain the process that you experienced in dealing with the situation.
4. What are the attributes of a creative teacher? How might these skills be acquired?
5. Where might you go to learn to develop your own creative problem-solving abilities? Why?

Imaginative play and make-believe
facilitate language development
and the ability to categorize and
think.
- Jerome Singer

Chapter 11. LINGUISTIC STRATEGIES

All educators are concerned with improving the language and communication skills of their pupils. Many persons have great difficulty using words, phrases, and other language units in meaningful ways. A primary concern of linguistics is the study of "meaning" in varied forms of language. Through the use of special learning strategies, pupils can be taught linguistic skills which contribute to the development of their thinking and problem solving abilities.

Considerable evidence exists which supports the value of using fantasy lessons, make-believe, and "pretend" techniques with both children and adults. Constructive fantasy production correlates significantly with the development of higher order language skills and makes learning more joyful and productive. Reading, writing, spelling, and oral vocabulary can all be greatly improved through the use of imaginative multisensory teaching methods which help to integrate left and right brain hemispheric processes with the "total person".

Some of these strategies are presented in this chapter. All of them emphasize the importance of thinking imaginatively. Some of them, such as the lesson on "spelling imagery" are almost totally dependent upon the use of mental imagery if success is to be achieved. Of course, these lesson strategies are merely suggestive and should be extended with other relevant exercises and materials.

One highly recommended supplemental activity is to have the pupil create additional learning tasks using these exercises as models. The learner should also be encouraged to draw or write his or her responses. Whenever possible, dramatic enactment and movement activities should also be used.

How To Use These Activities.

Explain that oral and written language is one of the distinguishing characteristics of human beings. Point out that the activities in this chapter are primarily concerned with developing novel linguistic concepts. Traditional convergent thinking activities are presented in ways that require some imaginative or divergent response.

Begin by introducing the first activity outlined under "Developing Linguistic Images and Concepts." Select a well known story (such as The Three Billy Goats Gruff) which is fun and easy to imaginatively associate to. Have pupils play with the story ideas and concepts and finally create their own innovative version. Then use the My Creative Thinking Guide to review what they have done. Proceed to the following more convergent activities only after ample introductory word-play and novel thinking.

- Commonalities: Discuss what is meant by attributes, similarities, and analysis. Ask the class to give examples of each term before introducing the activities.
- Opposites: Contrast opposites and differences. Challenge the class to produce at least one divergent response to each item.
- Absurdities: Define "absurdity" as something that most people think is very foolish or nonsensible. Have pupils write examples on the chalkboard and draw exaggerated pictures of them.

- Innovative Forms : Explain that most language is interpreted and understood within the context of a certain cultural experience that is constantly changing. Have the class suggest new words or phrases that have recently appeared in song, slang, or other popular forms.
- Metaphorical Abstractions: Discuss how words may represent many different imaginative ideas and are not always to be taken literally. Give examples of puns, proverbs, fairy tales and mythological poetic language forms which might have varied meanings and interpretations.

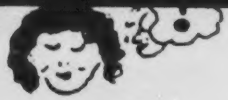
Above all, encourage pupils to enjoy playing with words and language expressions, to continue to experiment with novel or divergent responses to conventional "single answer" questions, and to communicate with feeling and imagination.

Developing Linguistic Images and Concepts.

- Introduce the words or concepts to be used through a model picture or object and ask what pupils know about it.
- Present some novel oral rhythmic prose, songs, chants , etc. in which the words are used, repeated, and memorized.
- Show picture-word cards to be organized and sequenced. (such as in The Gingerbread Man, Old MacDonald Had a Farm, Billy Goats Gruff, etc.).
- Playfully list varied word associations such as:

Topic:"Billy Goats"			
Descriptions	Actions	Place	Results
big	run	over the bridge	to get home
white	yell	near the water	and fight
smelly	kiss	on a fence	then eat grass

- Repeat and predict varied word sequences.
- Illustrate (draw, etc.) pictures of sequential characters, objects, and ideas.
- Copy new words and phrases on cards or strip paper.
- "Read" and sequence with a friend of small group.
- Review main ideas and the most enjoyable parts and rhythms in the material presented.
- Supplement with similarly shared selections from favorite children's stories, award winning books, etc.



- MY CREATIVE THINKING GUIDE -

Topic:

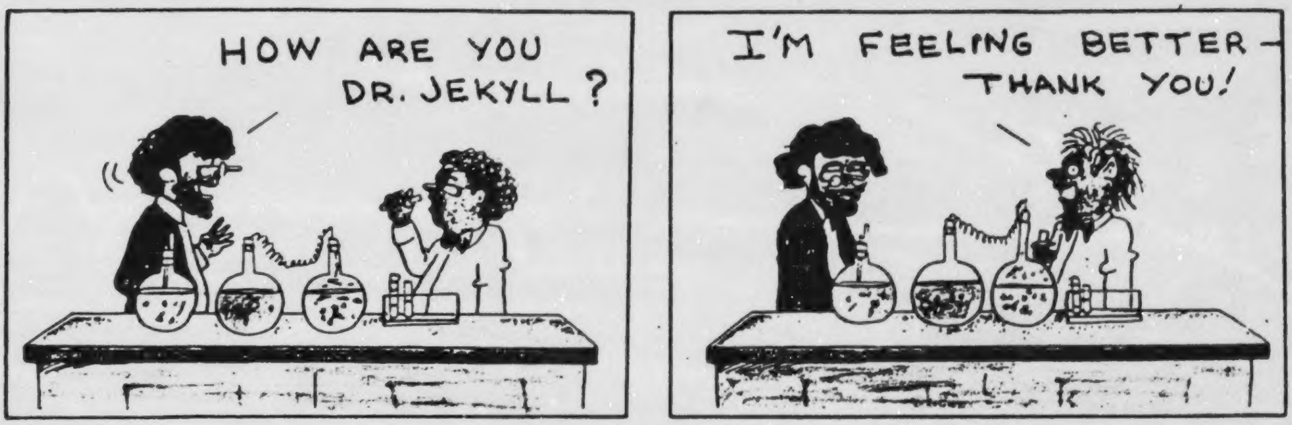
Pupil's Name:

WHO? . . . (information processing) . .	**WHAT?** . . . . (categorization) .	**WHERE?** . . . (descriptive associations
WHEN? . . . (sequential organization)	**HOW?** (interpretation) .	**WHY?** . . (hypothesizing) . . .
Describe the Main Idea: . . . (summarization) .	I would change or transform this story (etc.) by: . . . (originality)	Draw an exaggerated picture of a key concept, character, etc: . (imagination) . . .

IMAGINARY LIKENESSES AND DIFFERENCES -

Close your eyes and listen carefully.

I want you to imagine several different ways that these things are alike and different.


HOW ARE YOU DR. JEKYLL?
I'M FEELING BETTER - THANK YOU!

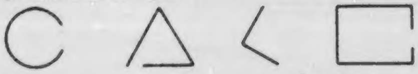
1. Tell me how Dr. Jekyll and Mr. Hyde are alike and how they are different.
2. Tell me how Mickey Mouse and Donald Duck are alike and how they are different.
3. Tell me how Blondie and Dagwood are alike and how they are different.
4. Tell me how Charlie Brown and Lucy are alike and how they are different.
5. Tell me how Snoopy the dog and "The Red Baron" are alike and how they are different.
6. Tell me how Pac Man and Dracula are alike and how they are different.
7. Tell me how the monster Frankenstein and a mechanical robot are alike and how they are different.
8. Tell me how "Superman" and Startrek's Mr. Spock are alike and how they are different.
9. Tell me how Robinson Crusoe and Tom Sawyer are alike and how they are different.
10. Tell me how E.T. ("the extraterrestial") and you are

COMMON ATTRIBUTES –

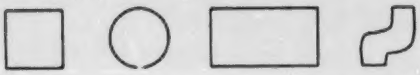
Study the attribute forms and answer the questions. Then imagine another form with those attributes and draw it in the proper box.

TIPS

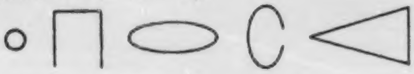
All of these are Tips:



None of these is a Tip:



Which of these is a Tip?

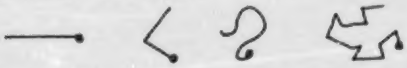


What is a Tip?

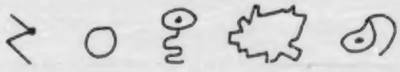
Draw a Tip

BEEPS

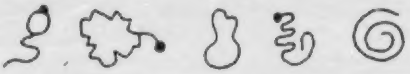
All of these are Beeps:



None of these is a Beep:



Which of these is a Beep?



What is a Beep?

Draw a Beep

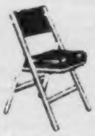
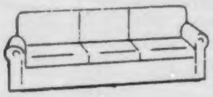
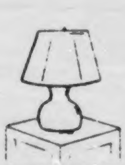
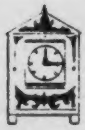
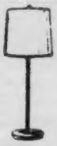
REAL

SIMILARITIES AND DIFFERENCES —

Complete the exercises in the boxes. Then close your eyes and imagine some other kinds of objects or symbols that have some similarities and differences- describe them to me.

Objective: Identifying similar functions

1. Put your finger on each object and tell me what it is.
2. Explain to me what each object is used for or what it does.
3. Put your finger on two objects that have identical purposes.
4. Put your finger on two other objects that have similar purposes. What is that purpose.
5. Which object above does not belong with the others? Why? Mark it with your pencil.
6. Tell me another object that would go with the one that you marked. In what way is it similar?

Objective: Recognizing abstract similarities and differences

1. Touch each of the figures below and tell me their names.
2. Some of these are numerals. Touch the numerals and tell me their names.
3. Some of these are letters. Touch the letters and tell me their names.
4. Show and tell me the symbols that go together. Tell me why they go together.
5. One symbol does not belong with the others. Mark it and tell me why it does not belong. What is this symbol called? Tell me some other kinds of symbols that would go with this one. Draw one on the board.

5 A 9 7 F ◇ M

VERBAL OPPOSITES -

Close your eyes, listen carefully, and think what the missing word might be. Then tell me the word. (The common responses are printed upside down on the bottom of this page)

1. The opposite of in is ________.

2. The opposite of North is ________.

3. The opposite of black is ________.

4. The opposite of smooth is ________.

5. The opposite of laugh could be ________.

6. The opposite of false could be ________.

7. These fruits are stale but those fruits are ________.

8. Those pencils are the same but these are ________.

9. This knife is dull but that one is ________.

10. That horse is very wild but this one is ________.

11. This ladder is safe but the one over there is ________.

12. Most of the water here is very shallow but over there it is very ________.

13. Relatively speaking, automobiles are expensive while bicycles are ________.

14. Although he is imprisioned he longs to be ________.

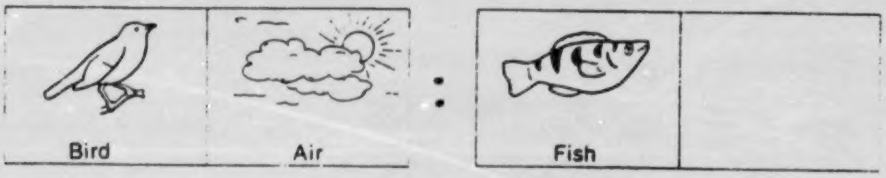
15. Truth is almost always better than ________.

(1. out, 2. South, 3. white, 4. rough, 5. cry, 6. true, 7. fresh, 8. different, 9. sharp, 10. tame, 11. dangerous, 12. deep, 13. cheap, 14. free, 15. falsehood)

ANALOGIES -

Think carefully and complete the analogies presented below.

Primary:



- A bird is to the air as a fish is to the______
- Front is to back as top is to______
- Long is to short as skinny is to______
- Milkman is to milk as mailman is to______
- Racket is to tennis as bat is to______

Elementary:

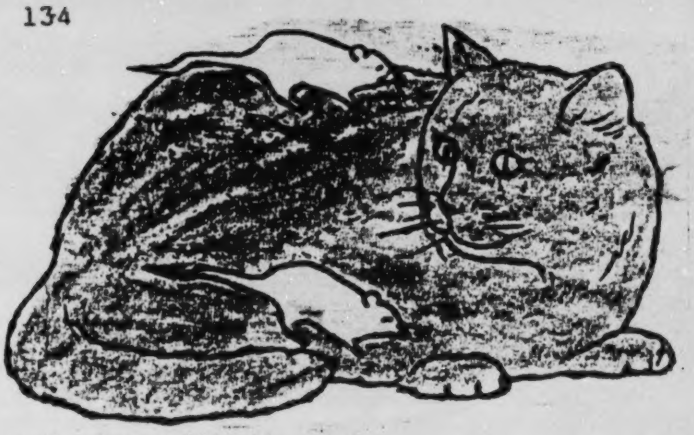
- Leaves are to rake as dirt is to______
- Ears are to sound as eyes are to______
- Hammer-Carpenter : Paintbrush-
- Fireman-Fireengine : Farmer-
- Purse-Money : Suitcase-

Advanced:

- Earth-Sun : Planets-
- Strings-Guitar : Valves-
- Snake- Reptile : Horse-
- Digestion - Stomach : Ideas -
- Reality- Imagination : Fact -

Other Forms:

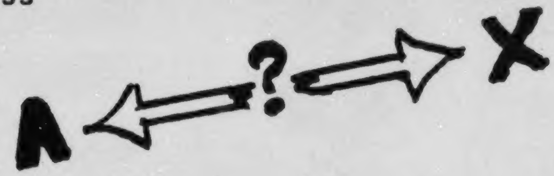
- $\frac{\text{violence}}{\text{activity}} = \frac{\text{melancholy}}{\_\_\_\_}$ (cruelty, silence, mood, morning)
- $\frac{\_\_\_\_}{\text{length}} = \frac{\text{clock}}{\text{time}}$ (scales, inch, telescope, ruler)



ABSURDITIES -

Close your eyes and listen carefully to what I say. Imagine what is happening. Then explain what is absurd or silly about what you visualized.

- The two mice loved to tease and play with the cat.
- When it rained Michael folded up his umbrella and went outside.
- Larry's ice cream cone froze in the hot gymnasium.
- Mary dried herself with the towel and then took a bath.
- In the spring the leaves fall off the trees.
- Barbara always puts her shoes on before her socks.
- Goldilocks invited the wolf to her grandmothers house.
- John and Linda watched the football game on the radio.
- A dinosaur was found alive in the fossil museum.
- The fire was so hot that Tim put more wood on it.
- Aladdin's magic carpet would not fly because it ran out of gas.
- "Look what I have!" said the woman excitedly. "This is a magic wand! You can see it in my hand! It will dissolve anything you touch with it in mere seconds, and it only costs five dollars."
- "Tonight's channel 5 television news report features pictures of a hugh flood taken directly from Noah's Ark."
- Imagine your own absurdity and write it below:



WORD ASSOCIATIONS

Look at the word "meadow" below and the associative words (cow, grazing, milk) ending with "ice cream"; now close your eyes and create an imaginary picture of these word associations. Do the same for the words "dirt" to "astronault".

meadow → cow - grazing - milk - ice cream

dirt → earth - space - ship - astronault

Now write in your own words which imaginatively associate the following:

walk → ghost

mountain → superman

forest → music

ocean → mystery

dance → rainbow

house → Cinderella

apple → monster

Draw and color a picture of one of your above word associations.

INCOMPLETE PROVERBS-

Read the incomplete proverb aloud and provide the last word in the sentence (the most common answers are printed upside down at the bottom of this page). Then use your imagination to explain what the proverb could mean.

1. Haste makes ________.

2. No gains without _______.

3. A penny saved is a penny _______.

4. Always let a sleeping dog ________.

5. Little strokes fell great ________.

6. A rotten apple spoils the ________.

7. Well done is better than ________ said.

8. A bird in the hand is worth ________ in the bush.

9. Tongue double ________ trouble.

10. Little rogues easily become ________ ones.

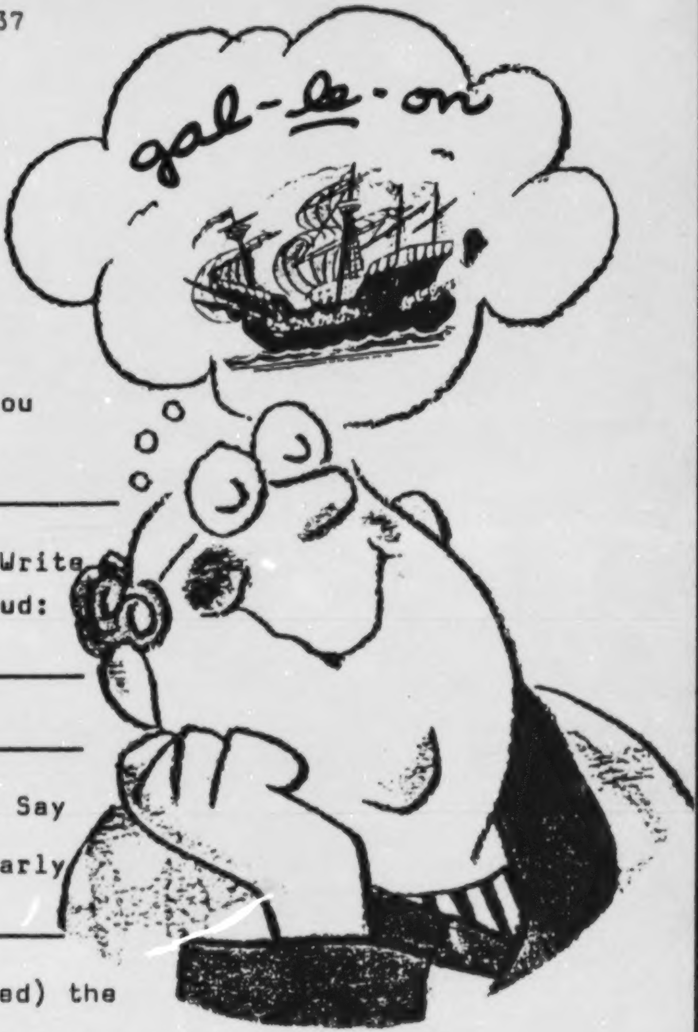
11. Fish and visitors stink after ________ days.

12. Early to bed and early to ________, makes a person healthy, ________, and wise.

(1. waste ,2. pains ,3. earned, 4. lie, 5. oakes,
6. barrel, 7. well, 8. two, 9. brings, 10. great,
11. three, 12. rise, wealthy)

MULTISENSORY SPELLING IMAGES —

Select a word you wish to spell and following the exercises below.



1. Copy the word correctly as you spell it aloud three times:

   ____________ ____________ ____________

2. Use the word in a sentence. Write the sentence and read it aloud:

   ____

   ____

3. Write the word in syllables. Say the syllables loudly and clearly several times: ____________________

4. Imagine (with your eyes closed) the word divided into syllables together with its pictorial representation. Say the word and spell it aloud.

   *Imagine the syllables in color. Say the syllables and indicate their color.

   *Imagine that you are underlining the syllable which is most important for you to learn- what syllable is it and what is its color

   *Imagine that you are writing the word in syllables on a chalkboard. Now write it in the air with you finger.

5. Practice visualizing and writing your word several times using different materials (chalkboard, paper, saltbox, pens, pencils, crayons, etc.) as you say it aloud.

NONSENSE RHYMES AND CHANTS —

Close your eyes, listen to the rhyme and visualize what is happening. Then repeat the rhyme with me. Now say it in rhythm by yourself. Describe the most vivid part of your image. Create your own nonsense rhymes, chants, and songs.

. Roses are red, roses are yellow,
grandfather's teeth, are lost in the jello!

. Ashes to ashes and dust to dust
show me a cat that a mouse can trust!

. Mary had a little lamb it liked to run and play
and everytime that Mary left it stayed away all day!

. Poor old lady, she swallowed a fly
I don't know why she swallowed a fly.
poor old lady, I think she'll die.

. Cinderella, dressed in yella,
went upstairs to kiss a fella,
made a mistake and kissed a snake,
and came downstairs with a bellyache.

. My mother was born in England,
my father was born in France,
and I was born in diapers,
because I had no pants!

. Monkey was a sittin' on a railroad track,
pickin' his teeth with a carpet tack,
the train came suddenly around the bend
and the monkey reached his journeys end!

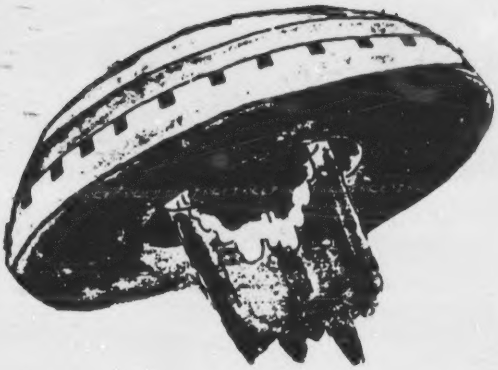
INNOVATIVE FAIRY TALES -

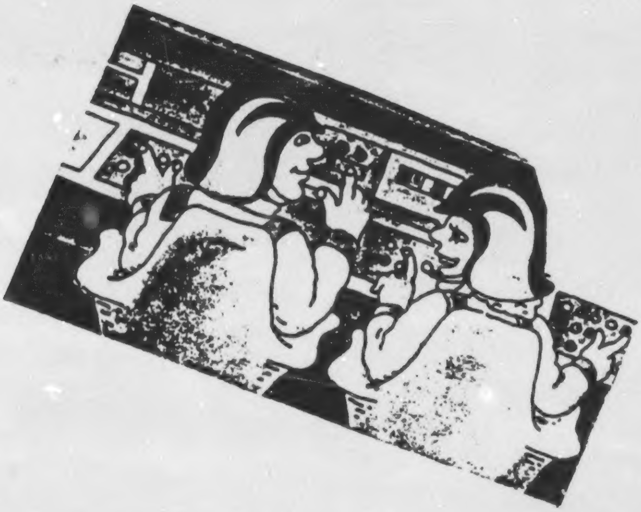
Close your eyes and listen to what I tell you about a famous fairy tale. Then imagine what might happen and tell me all about it. What would you do if you were:

1. Robinson Crusoe stranded on an island and you discovered a live dinosaur there.
2. Cinderella who went to the ball but you did not lose your shoe.
3. Hansel or Gretel in the witch's gingerbread house and she invited you to stay to eat all you wanted and to become her helper.
4. Jack in the beanstalk-and the giant became your best friend.
5. Snow White or one of the seven dwarfs and you discovered a strange tunnel and noise in your mine shaft.
6. You became E.T.'s (the Extraterrestial) close friend and decided to go with him to live on his home planet.
7. The Ugly Duckling who never did discover that he was a beautiful swan.
8. Beauty or the Beast but you did not speak the same language and could not talk to each other.

- - - - - - - - - - - -

Now tell me what your favorite fairy tale or story is about and if you could change it how you would do so:





• Through the universe

They had been gone from Earth for exactly 5 months. Of course, they had spent 6 weeks on the moon station refueling for the long flight to Venus. Brad knew that there were many children already living in the space city on Venus. After all, this was the eighth expedition to make the trip. Nevertheless, he felt like a pioneer as he looked out of the windows at the bright stars surrounding him in the universe. Then he saw Osako coming through the door. She reminded him of Japan and the 10 other nations that also had volunteers on this flight. Brad felt close to his friends from throughout the world as he looked out on the beautiful universe. He wondered what his future life with his universal family would be like.

1. Draw or color a picture of what you think the spaceship may have looked like.
2. With your class, discuss what you think it might be like to live on a moon station for 6 weeks.
3. Try to put yourself in Brad's place and to feel what his present world on the spaceship might be like. Describe your feelings to your discussion group.
4. Write a paragraph describing what Brad's future life on Venus might be like.
5. All humanity is in the process of growing, changing, and becoming new and different. Discuss what you think Osako might hope to become in a new life on Venus.
6. Humanity is one large family living on the spaceship called earth. We are part of many forms of life throughout the universe. What other forms of life do you think may exist in the universe?

Follow-up Suggestions.

Always have pupils modify or design some new items modeled after activities presented in this chapter. Then encourage related activities such as the following.

- Compile a list on the chalkboard of all the responses your pupils give to "tell me how the monster Frankenstein and a mechanical robot are alike and how they are different."
- Have a pupil write a verbal analogy in four different forms as presented in this chapter.
- Teach several spelling words using the multi-sensory imagery methods and discuss the results.
- Have a pupil select a verbal absurdity and draw a pictorial representation of it. Make up a story about it.
- Create your own fairy tale based on some personal experience or awareness.

Ch.11 DISCUSSION QUESTIONS AND ACTIVITIES

1. What makes a song popular? Give several examples.
2. Create some new words (including funny sounding "nonsense" words) by imaginatively changing or adding to existing ones. Make up your own pronunciation and definitions.
3. Who is your favorite fairy tale character? Describe your feelings and impressions about this character.
4. When are proverbs used? Share one that you have heard your parents or friends use and explain what it means to you.
5. What are the varied resources in a library that might be used to find other kinds of word games and thinking puzzles?

"Laughter is the sun that drives
winter from the human face."
- Victor Hugo

Chapter 12. DEVELOPING THE SENSE OF HUMOR AND DIVERGENT THINKING

It has been said that man is the only animal who can laugh at itself. This is because mankind has learned to recognize and express ridiculous behavior in self and others. Most civilizations have valued the ability to be able to identify and laugh at the absurdities of life--and to apply these insights to personal and social improvement and survival.

Humor is the distinctly human faculty of perceiving, speaking, and writing what is amusing or funny. The purpose of expressive humor is to decrease tension and anxiety, and to increase motivation to attend to the varied meanings of words and ideas which are being communicated between persons. When we describe humorous situations through jokes, tall-tales, puns, satire, etc., we are playing with ideas which are representations of reality. Such representative thought is truly a figment of our creative imagination.

Because a good sense of humor facilitates communication, it is something to be treasured and nurtured. Most learning disabled children have an undeveloped sense of humor. Often, this is due to dysfunctions in the psycholinguistic associative processes which result in syntactical and semantic problems. For example, dyslexics commonly express confusion with word meanings and sentence structure.

Although most persons are born with a potential sense of humor it must be developed through experience and education. Special educators should provide some humorous lessons which stimulate the child to express inferences and creative ideas. Good humor provokes the imagination and can be used to help us learn more effectively. A wise saying is that "a good laugh everyday helps to keep the doctor away." In this chapter we will consider various forms of humor and some ways it may be used to stimulate creative imagination and problem solving.

The Humor Survey.

For educational purposes, it is best to start with a "humor survey" of what the child thinks is amusing. What "tickles the funny bone" of one person may appear unintelligible, crude, or even repulsive to another. As with all human faculties and abilities, the sense of humor is gradually refined through progressive stages of development. Any survey should take these developmental levels into consideration. These stages can be characterized as:

I. The Early Childhood "giggling prankster" Stage.
II. The Middle Childhood "foolish comic" Stage.
III. The Late Childhood "puzzling riddler" Stage.
IV. The Early Adolescence "punning wit" Stage.
V. The Adolescent-Adult "satirical critic" Stage.

Each of these stages is defined below with representative examples of humor. The major thinking processes and basic learning experiences are also identified for each stage. It must be emphasized that the Humor Survey is not a test but an inquiry into the kinds of divergent and creative humorous thinking which seems to characterize that person at the time. The evaluating teacher usually begins with those humorous items on the stage immediately below the child's chronological age, saying:

> Here are some funny jokes, stories, and riddles. Listen carefully and then tell me in detail why or what is funny or foolish about it and why this is so.

It is essential to write down the person's verbal response and their explanation. In most cases, it is necessary for the teacher to carry on a brief inquiry or dialogue with the person in order to determine what they are actually thinking. Although there is no formal scoring of items, the following rating system may be helpful for later follow-up lesson planning:

+ = Demonstrated good understanding and gave verbal explanation of the humor involved.
? = Demonstrated partial understanding and very limited verbal explanation.
0 = Demonstrated lack of understanding with poor or no verbal explanation.

- I. THE EARLY CHILDHOOD "GIGGLING PRANKSTER" STAGE. -

This stage is characterized by "Dennis the Menace" type personalities who exhibit spasmotic laughter and enjoy doing mischievous tricks and "being tickled pink." This largely occurs during the preschool years from one to approximately five years of age. The basic thinking experiences are sensory motor adaptations, discovery, and invention. Some typical humorous items at this stage are:

1. Daddy tickled and tickled the baby and they both laughted.
2. When Suzie opened the box a big paper snake jumped out and hit her on the nose.
3. Billy put so much ice cream on his cone that some fell off and wet his pants.
4. Dennis the Menace put some worms on his mother's house plants.
5. The little dog bit the ghost on the seat of his pants.
6. Activity: Make a "funny face" for me.

- II. THE MIDDLE CHILDHOOD "FOOLISH COMIC" STAGE. -

This stage is characterized by the "Goofy/Donald Duck" type personalities who frequently do silly and nonsensical things and enjoy "playing around." Most often, this occurs during the primary school years, ages six through nine. The basic thinking experiences are those involved in establishing concrete (physical) relationships and classifications. Some humorous items are:

1. Mary had a little dog, its fleece was white as snow.
2. The clown put his head in the lion's mouth.
3. Dagwood was late for work, ran out of his house and knocked over the mailman as he hurried to catch the bus.

4. What comes after "G"? (Whiz)
   What comes after "O"? (Yeah)
5. When the people saw the boys with pies in their hands running at each other, they started to laugh.
6. What's white on the outside, green on the inside and hops? (a frog sandwich)
7. When Goofy found that he was putting his shirt on backwards he turned around the other way and pulled it on over his head.
8. Knock knock: Who's there? Arthur.
   Arthur Who? Arthur any more jokes.
9. Girl to boy: "The only time you have something on your mind is when you wear a hat."
10. Daniel Boone was born in a log cabin that he built himself.
11. Activity: Look at this page from the Sunday comics and tell me something that you think is funny.

- III. THE LATE CHILDHOOD "PUZZLING RIDDLER" STAGE. -

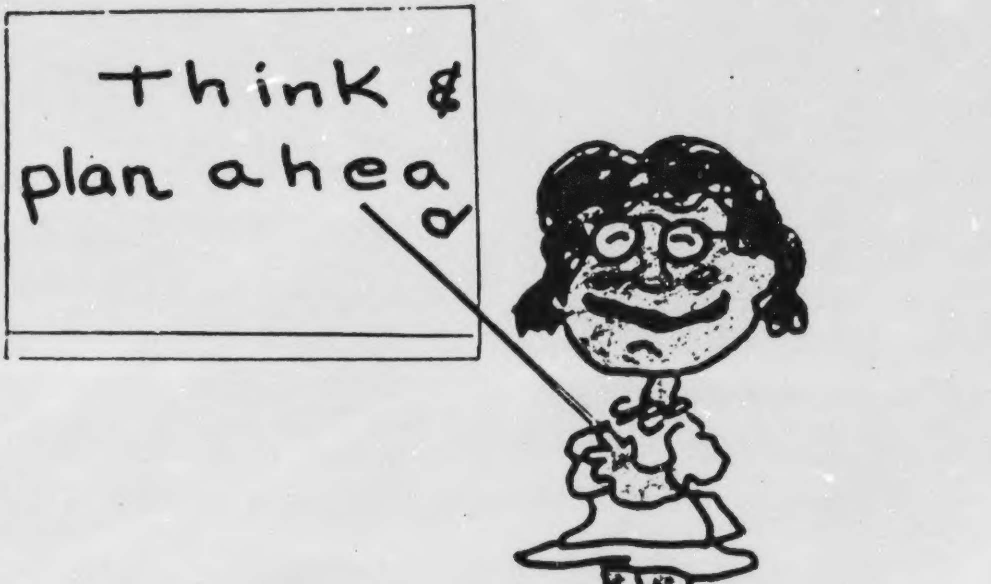
This stage is characterized by the "Lucy/Charlie Brown" personalities who struggle with perplexing questions and problems and come forth with ingenious answers. This is the "fun and games" stage in elementary school between nine and twelve years of age. The basic thinking processes are engaged in comprehending beginning abstractions and analogies. Some humorous problems are:

1. Why do birds fly South? (because it's too far to walk)
2. What's the difference between here and there? (the letter T)

3. What has 18 legs and catches flies? (a baseball team)
4. What falls often but never gets hurt? (rain)
5. Tim: What did dinosaurs eat?
   Slim: Judging by the one in the museum, they didn't eat anything.
6. Ann: What does a burglar feel when he climbs in a window and is greeted by a fierce Great Dane dog?
   Dan: Burglar Alarm!
7. When does 11 + 2 equal 1? (on a watch)
8. Belle: Who is the strongest man in the city?
   Mel: A traffic cop. He can stop a speeding truck with one hand.
9. What did one eye say to the other eye?
   (there's something between us that smells)
10. Where can you always find money? (in the dictionary)
11. What can't you name without breaking it? (silence)
12. Harry: Why are you running? Larry: To stop a fight!
    Harry: Who's fighting? Larry: Me and another fellow.
13. What is it that can be broken without being dropped?
    (a promise)
14. Activity: Look at this joke book with funny pictures, read one of the jokes and explain it to me.

- IV. THE EARLY ADOLESCENT "PUNNING WIT" STAGE. -

This stage is characterized by the "Cathy" type cartoon personality who perceives and implies the varied meanings between words and ideas. On the intermediate school level, between twelve and


Think &
plan ahead

fifteen years of age, "playing with words" is popular. Propositional logic is established. Try these puns:

1. The frog is the weakest animal of all--he will croak if you touch him.
2. Teacher: Do you know why you make such poor grades, George?

   Pupil: I can't think!

   Teacher: That's right.
3. Joe: Why did you hit the dentist?

   Moe: He got on my nerves.
4. My boy friend put two and two together and got my number.
5. Teacher: What is the definition of ignorance?

   Pupil: I don't know.
6. Doctor, you told me to give my husband enough rope; so he skipped!
7. On mules we find two legs behind and two we find before,
   We stand behind before we find what the two behind before!
8. Cy: Do you like my new bathing suit? I got it for a ridiculous figure.

   Vi: You certainly did.
9. What do you call it when your teacher phones your parents to tell them you're doing poorly in school? (a bad connection)
10. There was a young lady from Niger
    Who smiled as she rode on a tiger
    They came back from the ride
    With the lady inside
    And a smile on the face of the tiger.

11. Make up a pun for me using the words bare and bear.

- V. THE ADOLESCENT--ADULT "SATIRICAL CRITIC" STAGE. -

This stage is characterized by "Doonesberry" and Herblock, political cartoonists who use humor and ridicule to expose folly and to laugh at one's own mistakes. This form of humor develops during and after the secondary school years involving hypothetical-deductive reasoning and judgment. It is typified by "tongue-in-cheek" biting forms of humor such as:

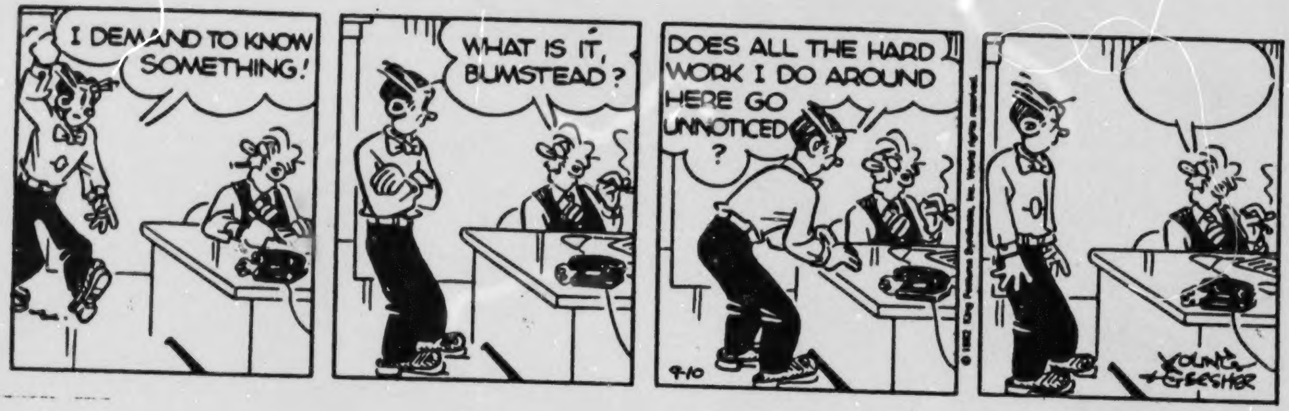
1. Mom: Did you cry at your first day in that new school, Tom?
   Tom: No, but the teacher sure did!
2. A man of words and not of deeds is like a garden full of weeds. (ancient proverb)
3. Clem: I hear that fish is good brain food.
   Lem: Yep, I eat it all the time.
   Clem: Another theory disproved.
4. Beware of the young doctor and the old barber. (Ben Franklin)
5. An optimist is a guy who thinks his wife has quit smoking cigarettes when he finds cigar butts around the house.
6. All men are worms, but I do think that I am a glowworm. (Winston Churchill)
7. The report of my death is greatly exaggerated. (Mark Twain)
8. Activity: Look at this political cartoon and tell me what is funny about it.

Educational Implications

"Sense of humor" in the cognitive and intellectual development of the child has been widely recognized as important and encouraged by psychologists. This is apparent from the use of humorous items on individual intelligence tests. For instance, the Stanford-Binet test consists of a developmental scale of tasks and problems which include "foolish saying" and "funny pictures" at several different levels of sophistication. Similarly, Jean Piaget has stressed the importance of providing the young child with numerous opportunities for playful discovery and invention. Another psychologist, J. P. Guilford, has written extensively about the importance of developing creative potentialities and divergent thinking skills in both children and adults.

Numerous books, programs, and materials are available to help teachers and parents develop imaginative, humorous and creative divergent thinking skills in children. The most commonly used ones are jokes, riddle and puzzle books with colorful pictures and attractive print. These books are available in all children's libraries and bookstores. Many classroom strategies for using jokes and humor in the development of creative imaginative abilities have been outlined by Ruth FitzSimons and others. A summary of these educational possibilities include having children:

- Repeat a joke after the teacher.
- Tell and discuss jokes and humorous events.
- Act out funny incidents and stories.
- Write and illustrate joke books.
- Collect and discuss comics and cartoons.


I DEMAND TO KNOW SOMETHING!
WHAT IS IT, BUMSTEAD?
DOES ALL THE HARD WORK I DO AROUND HERE GO UNNOTICED?
9-10
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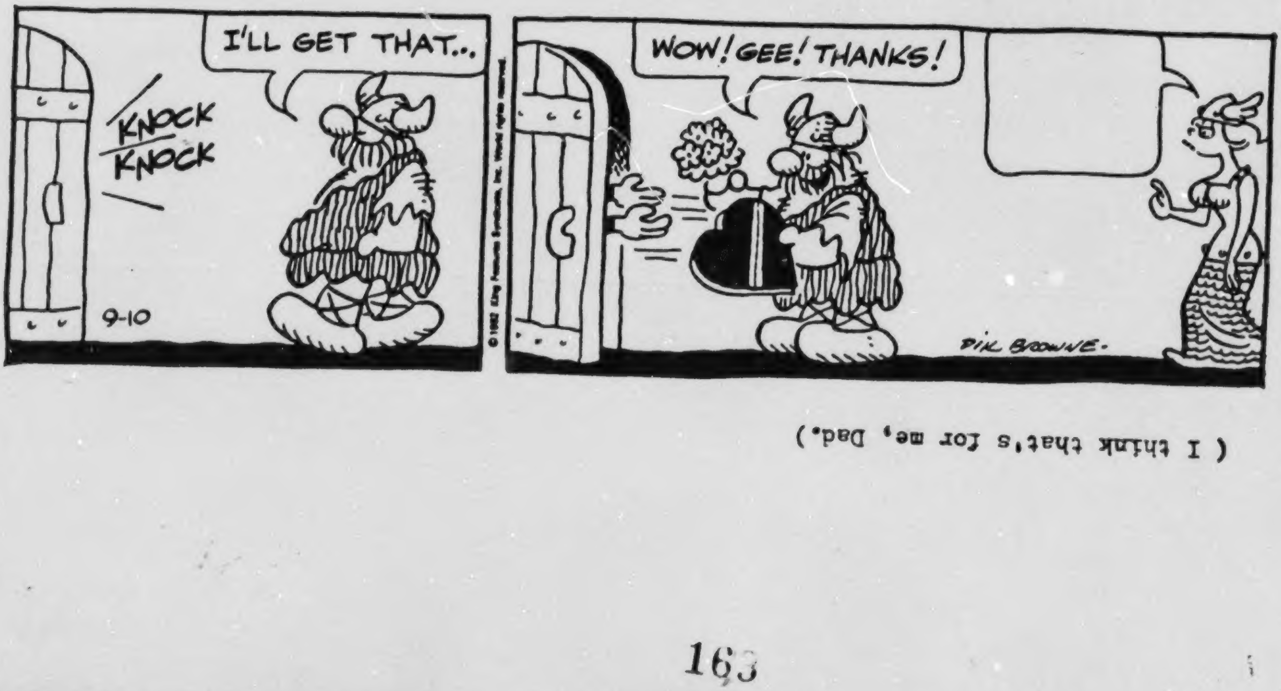
YOUNG + GERSHER


I'LL GET THAT...
KNOCK
KNOCK
9-10
© 1982 King Features Syndicate, Inc. World rights reserved.
WOW! GEE! THANKS!
DIK BROWNE

- Write imaginatively different words and sentences to existing cartoon frames.
- Tape record jokes and funny stories.
- Share humorous poems, songs, and chants.
- Put on a vaudeville show and videotape it.
- Imagine and write funny divergent endings to fairy tales and selected stories.

Perhaps the most important tool for developing the sense of creative humor in children is the teacher's (or parent's) personality. The willingness to accept divergent thoughts and to play with words and ideas is essential. Teachers should be open, accessible, and appreciative of humor and its possibilities for helping their pupils to develop creative imagination and to learn more effectively.

Ch. 12 DISCUSSION QUESTIONS & ACTIVITIES

1. Tell your favorite joke.
2. Share a humorous greeting card that you have changed or modified.
3. What is your favorite cartoon character? Why?
4. Read a funny article or short story to your class and then have them suggest some changes to it.
5. Have a "Laurel and Hardy" film party and enjoy your laughter. Share and discuss some of the most funny scenes.

"How many never think,
who think they do"

- Jane Taylor

THE CREATIVE SPIRIT

Creative thinking can be taught. The first step is to teach children that they possess unique creative potentialities which can be developed through willful resolution and imaginative effort. Then, the teacher and educational system must provide an open, and stimulating, learning environment where curiosity, speculation, and experimentation is rewarded. True thinking requires the comprehension and exploration of the relationships between thoughts, words, and ideas--and not in the dull mechanical repetition of regurgitated facts or exercises.

Few schools emphasize thinking skills or provide sufficient opportunity for creative imagination and problem solving. For example, most reading programs stress basic vocabulary and decoding skills but fail to spend enough time on helping pupils to imaginatively relate and integrate words, sentences, and key ideas.

In many situations, the natural curiosity of children and their enthusiastic spirit for learning may even by destroyed by dull and dreary educational routines. George Bernard Shaw frequently stated that he felt his real education was actually interrupted in school--his remedy was that schools should be made as "attractive as sin." Schools should teach children to believe in themselves and to nurture their own creative spirits.

Divergent Thinkers

Unfortunately, imaginative and divergent thinkers are seldom encouraged in school. Oftentimes they are even perceived as being noncooperative and disruptive of the regular routine. Consequently, the teacher and the entire system may feel threatened and the child may be viewed as having learning or behavior problems requiring special treatment to enable him or her to conform. Under such circumstances it can be difficult for many children to maintain their self-esteem and vital interest in learning.

However, where self-esteem is maintained and the vital creative spirit is strong, most persons continue to learn in spite of formal school restrictions and limitations. Self-education has always been a major form of personal development. Some varied examples of divergent thinkers and their creative products are worth considering.

- Thomas Edison was a bother to his teachers and an unhappy pupil. He felt most of his real learning was experienced through his novel experiments which he conducted at home and later in his laboratories. Edison left school at an early age and went his own way. A sample of his terrible grammar can be found in his letters; for instance, at 19 years of age he wrote a friend: "Hows all the folk did you receive a Book of Books from Memphis that he promised to send them." But Edison's belief in himself and his creative energy gave him perseverance to conduct exhaustive investigations which finally resulted in numerous practical inventions--including the electric light bulb and the phonograph.
- Helen Keller was a deaf-mute who did not talk until she was ten but then went on to finish college and become a successful lecturer and author. She developed her unique abilities through the use of finger-spelling, an innovative teacher, and strong personal determination to communicate.
- Albert Einstein was notably slow and "backward" in school and had to be tutored in mathematics. In school, a teacher's report described him as "adrift forever in foolish dreams" However, Einstein developed and treasured a good imagination which enabled him to visualize his

ideas which he later analyzed and verified.

- President Woodrow Wilson did not learn to read until he was 11 years old. Even as president of Princeton University he had language problems. However, his vivid imagination and drive helped create the League of Nations which became the forerunner of the United Nations.
- Nelson Rockefeller was formally diagnosed as dyslexic with a significant reading disability. But this did not keep him from becoming an outstanding civic leader and Vice-President--although he had to repeatedly practice his speeches using large cue cards with words broken down into syllables.

Many other notable persons had severe learning problems but overcame them with resolution and compensation. For instance, Abraham Lincoln wrote that when he became of age he did not know much in that he could "read, write, and cipher to the rule of three but that was all." Lincoln believed that it was his ideas and determination which enabled him to succeed. The famous brain surgeon, Harvey Cushing, was always a poor speller ("wright" for right, "offel" for awful, etc.) but learned to compensate quite well. General George Patton did not learn to read until he was twelve and continued to have difficulty in West Point but he developed a strong visual memory which helped him become a great military strategist. Ernest Hemingway was also acknowledged as an atrocious speller and poor grammarian, but his creative imagination made him into one of the world's great novelists.

Children commonly display their natural tendencies toward divergent and novel thinking in the early school years. This is usually demonstrated through their spontaneous associations to questions asked by teachers. Some imaginative and humorous examples are as follows:

Q: What is a diamond?

A: Ladies' best friend.

Q: Why is it, Johnnie, that when everyone in class offers you the choice of taking either a nickel or a dime you always take the nickel? Don't you know a dime is more valuable?

A: Oh, I know that, but then they would stop offering me the choice and I wouldn't even get the nickel.

Q: Mother: I hope you didn't cry during your first day at school?

A: Child: No, but the teacher sure did!

Productive Fantasy

The creative human spirit is also expressed through fantasy and daydreams. Fantasy is imaginative speculation about something of concern. It begins with the free association and exaggeration of facts and information. Productive fantasy occurs when a valued product finally emerges from this creative process.

The great myths and fairy tales are excellent examples of productive fantasy. Everyone dreams of escape and transformation. Cinderella, Hansel and Gretel, Snow White and numerous other tales provide a means whereby children and adults alike can explore their feelings and imaginations. Walt Disney films, Saturday morning cartoons, puppet-"muppet" shows, and Dr. Seuss books are common examples of the appeal of fantasy in our daily lives.

Teachers can use dreams and fantasy as part of language arts involving communicating, drawing, and writing experiences. Some imaginative responses of young pupils which have educational implications are:

Q: Billy, what are you thinking about?

A: I'm daydreaming about going to the moon but at night I dream about girls!

* * *

Q: Why are you holding your wrist like that, Joan?

A: I've got hiccups in my wrist (from a five-year-old discovering her pulsebeat).

Q: What was your funny dream last night?

A: A big elephant swallowed me but it was alright. He burped and I jumped out and ran home!

Since most fantastic thoughts, dreams, and associations (such as those above) have strong personal and emotional connotations, they are usually highly interesting and motivating to the person who has experienced them. Therefore, they can be used educationally and psychologically in influencing and changing human behavior.

Fantasy is powerfully expressed in artistic and musical productions such as The Wizard of Oz, E.T., Star Wars, Pinocchio, and other adventures which the viewer can identify with. Millions of records and tapes are sold as a result of the magic-like drawing power of exotic cover art, primitive rhythms, and imaginative lyrics. Business and industry successfully hawk their products through advertisements which capitalize on personal daydreams such as sex, fantasy, and escape. Modern artists such as Salvador Dali, Andy Warhol, Picasso and others have found their strange designs and imaginative works increasingly accepted and used in numerous ways. Videogames such as Galaxy, Pac-Man, Frogger, etc., combine fantasy adventures with physical involvement and have become a major new business. And, of course, the paperback romance novels and daily television soap operas are ever-present reminders of the compelling hold that fantasy plays in our lives.

Transformational Images

The creative spirit is strikingly portrayed in products which have transformed our way of life. Great music, soaring cathedrals, poetry, and innovative ideas and inventions all mark the progress of human imagination and civilization itself. Transformational works result from the uninhibited play and association of speculative ideas which are finally integrated into a new productive form.

For example, Benjamin Franklin was apprenticed as a printer's helper at a young age and was largely self-educated. But Franklin was forever curious and constantly tinkering with things and how they might be changed or used in new and different ways. While flying his kite and a key in a storm, the idea of the lightening rod was born. In a similar fashion came the Franklin iron stove and a host of other useful products.

We are surrounded by the results of transformational thoughts of all kinds. Thomas Jefferson transformed revolutionary ideals and philosophy into the Declaration of Independence. Theodore Roosevelt speculated on the meaning of his wilderness experiences and created the National Park system. H. G. Wells envisioned the dangers of atomic energy in his early book, The World Set Free, which later initiated the nuclear control movement. Carl Jung studied dreams and cultural symbols of transformation which led to the development of humanistic psychology. Thoreau, Gandhi, and Martin Luther King developed innovative useds of non-violence to advance civil rights and justice. And all modern scientific research and development laboratories are constantly searching for ways to improve and better their products.

In the early school years transformational ideas usually appear in the play with words. If children are encouraged to freely associate their thoughts and attempt to express them in new forms they frequently experiment with new words and often misuse them. What is important at this stage, however, is not the proper use of a word but the creative effort and willingness to attempt to communicate in new ways. Some examples of such attempts are obvious in the following expressions made by young children:

Q: How did your reading class help you?

A: It helped me read faster and my apprehension improved, too!

Q: What are you learning in English?

A: We're learning words of four cylinders now.

Q: What did you buy at the store?

A: I got a grief case for school.

One of the most imaginative portrayals of childlike attempts to communicate transformational ideas is presented in the hit film, "E.T.--the Extraterrestrial." E.T.'s simple utterance of "home. . . home. . ." was a culmination of associative experience including the use of a children's reading-readiness television program, the comic page, and an electronic learning aid which teaches children how to spell. John Dewey's adage that every great advance in science has issued from a new audacity of imagination was aptly demonstrated when E.T. ingeniously integrated all of his newly acquired information and created a unique device for communication with his home planet. By combining the electronic apparatus of Speak-and-Spell with a bent fork, an umbrella, a saw blade, and other makeshift household items, he produced a new system which allowed him to make contact with his fellow beings--and finally to return home. This science fiction fantasy quickly captured the hearts and minds of people everywhere because it appealed to their own basic transformational needs and emotions.

We all have the need to communicate our thoughts, feelings, and aspirations more effectively. And humans continuously struggle to create and transform themselves and the world in which they live. In childhood this process is initiated by playful interactions and tinkering with the immediate environment. As children grow and learn, their words, ideas, and problem solving strategies are shaped and refined. This is desireable, of course, unless their thoughts and spirit are stilted or destroyed in the process of unduly restrictive education.

Divergent thinking, fantasy, transformational experiments and expressions should all be expected and encouraged without undue concern for the "right" response or approach. The best education is one that stimulates the mind and fans the creative spirit to continue to actualize its own potentialities.

Summary.

This book has presented ideas and activities for developing creative imagination and thinking skills. These may be briefly summarized as follows.

1. We must learn to understand and value creative imagination.
2. It is important to appreciate the diversity of mental functions and to nuture wholestic development.
3. Creative imagination is expressed in varied ways at each stage of life.
4. The educational process requires time and encouragement for the preparation, incubation, illumination, realization, and regeneration of creative potentialities to occur.
5. Good instructional models for developing creative imagination and thinking skills should contain functional and measurable educational objectives.
6. The best instructional materials and strategies include novel and challenging active learning tasks .
7. Creative imagination is dependent on the development of strong sensory impressions.
8. Fantasy can be a very useful and productive endeavor.
9. We can cope better with new and anticipated situations by imaginatively practicing them in advance.
10. Creative problem solving requires divergent and flexible thinking.

11. Language concepts and comprehension can be facilitated by imaginative verbal play and exploration.
12. Humor is a unique saving-grace which stimulates imaginative thinking and reduces anxiety.
13. For continued growth and development we need to have faith in the powers of our own creative spirit.

* * * * *

I am the creative self that dwells in the heart

of every mortal creature:

I am the beginning, the lifespan,

and the end of all -

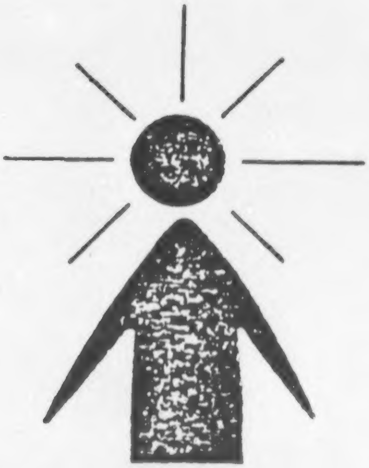
whatever in this world is powerful,

beautiful or glorious that you may know,

has come forth from a fraction

of my power and glory.

- Bhagavadgita



Ch. 13. DISCUSSION QUESTIONS & ACTIVITIES

1. Discuss a person that you know of who has experienced significant learning problems but who has also demonstrated a creative spirit.
2. Share some highly divergent and imaginative comments made by children you have known.
3. What is your favorite myth or fairy tale. Why? How might you change or modify it?
4. What might possibly be done to transform your school into a more effective learning center.
5. What might you do to transform yourself into a more imaginative and creative person?

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